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June 1995

Vol. 8 N° 9

JUNE
'95

Writing Your Own Book

Making Movies

Module Writing

Electronic Books

REVIEWS: All New Talking Alphabet, CableNews II, Cannon Fodder, Caxton Press, CD-Fast, Floopy, HolyBible, Impressive, ProArtisan II on CD, Shareholder Professional, Speech II, The Time Machine, VerbMaster.

n c s 

NORWICH COMPUTER SERVICES

How do you like the new-look Archive?

Thanks for all the responses to the new-look Archive last month (including the gentleman who thought it was so appalling it must have been an April Fool!). By and large, you liked the new layout but felt that the headings were a bit **too** bold. So, I have reduced the UltraBold to ExtraBold – I hope that does the trick.

Archive is YOUR magazine

Let me make the statement, as I do periodically, that this is YOUR magazine. You are the ones that make it happen, not me. If you write lots of good articles, it will continue to be (what I believe is) a very good magazine, but if you stop writing, Archive dies overnight. The supply of articles has been getting a little thin of late and for the last couple of months, it's been touch and go whether I would have enough articles. Please keep them coming! Thank you.

Please support NCS

At one time, we were able to make quite sizeable charitable donations from NCS – it was earning more than I and my family needed to live on – but those days are gone, I fear. As you may have guessed, these last two years have not been easy and we aren't out of the woods yet. I have to confess that our account with Acorn wasn't up-to-date when the first batch of PC cards came through but when we realised it, they had all been allocated to other dealers. I apologise for that over-sight which has meant an even longer wait for many of you. The cards are now coming through, so just listen to the ansaphone we've set up on 01603-766585 for the latest news.

Once again, thanks for all your support – I do appreciate it!

Paul Beverley

Government Health Warning – Reading this could seriously effect your spiritual health

He thought his run of lottery ticket entries had another week to go, so when his numbers came up, he thought he'd won two million pounds. Then he discovered it was the *previous* week that his entries had finished, not *this* week. So what did he do? He committed suicide.

"If only I had checked the ticket..." "If only my friend had reminded me that we only had a limited run of entries..." "If only..." "If only..." "If only I hadn't reacted so badly, my wife and two children wouldn't now be without husband and father." "If only..." "If only..."

~~~~~  
"Well, I try to follow the Sermon on the Mount – do unto others, etc." Excuse me, when did you last actually read it? Have you *ever* read it? (Matthew chapters 5 to 7.) Here are a couple of quotes to remind you...

*But I tell you that anyone who is angry with his brother will be subject to judgment... anyone who says, 'You fool!' will be in danger of the fire of hell.* (Matthew 5:22)

*And if your right hand causes you to sin, cut it off and throw it away. It is better for you to lose one part of your body than for your whole body to go into hell.* (Matthew 5:30)

~~~~~  
"But what IS hell?" Well, if what Jesus said is true (and I say "IF"), then hell is *realising* that it IS true – but too late! Jesus spelt out plainly the joys available to those who believe in him but he also explained that if people reject (or choose to ignore) his claims then, when they die, they will be given what they chose – a life without God – and *that* is hell. Hell is *realising* too late that you will *never* know the joy of God's love.

"If only I had read the bible." "If only I had paid more attention to the burlblings of that idiot Paul Beverley." "If only..." "If only..." "If only I hadn't thought I knew better." "If only..." "If only..."

P.B.

Archive

The Subscription Magazine for Acorn Users

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pbeverley@arcade.demon.co.uk

Products Available

Acorn price reductions – Acorn have dropped the prices of some of their computers and peripherals as follows:

A4 portable £1996 → £1521
A3020 Floppy (2Mb) £843 → £703
A3020 HD80 (2Mb) £1019 → £880
Risc PC 2/210Mb + 17" monitor £1938 → £1761
Risc PC 5/210Mb + 17" monitor £2114 → £1937
Risc PC 9/420Mb + 17" monitor £2466 → £2290
OPL Editor £65 → £46
Schedule £19 → £15
Plotter £34 → £24
Floating Point Accelerator £116 → £57

Acorn Replay Starter Kit – This includes a CD containing sample videos, stills and examples of multimedia applications, plus AREncode which allows you to compress your own films or add/change the accompanying soundtracks. There are also two manuals: the user guide, which has details of the software supplied, and 'A Guide to Desktop Multimedia', with advice on creating your own multimedia applications, shooting video, locating material, as well as tips on layout and style, etc. This costs £41 inclusive through Archive.
(Repeat entry because we forgot the price last month!)

Almost Logo – The Advisory Unit have updated their popular turtle graphics program. The suggestions for changes have come from teachers throughout the UK who have been using the

program in schools. New features include easier creation of new procedures and teacher control of step sizes to adjust the amount the turtle moves for a single unit. The package will drive both Valiant and Jessop floor turtles, and all commands can be supplied using a concept keyboard. Single user price is £25 +VAT, site licence £75 +VAT, from the Advisory Unit.

Application compression – Partis Logistics offer a service for software developers enabling approximately 100% more data to be stored on a floppy for distribution. If required, copy protection systems can also be added. Prices start from £250 per master disc.

ArcShare – ArcShare is an application for Microsoft Windows which allows a PC to connect to an Acorn Access network, and requires only a standard PC network card to operate. Fast Ethernet transfers are supported and it offers automatic file-typing of data. Files of any size can be transferred, and a simple FileManager style front end makes it easy to understand. Arcshare can be called up from the file manager.

Files and directories can be created or deleted on the Acorn, from the PC. Files can be copied from any position on the Acorn to any position on the PC. CD-ROM, floppy drives, IDE and SCSI drives on the Acorn can be accessed directly. The price is £79 +VAT from KCS Premier.

Archive Monthly Disc

- ◆ Arctic demo (Richard Proctor) from Ned Abell – see Comment Column, page 27.
- ◆ Files from Keith Hodge's Risc PC Column – page 53.
- ◆ PhoneDay-really(!)-ready STD application from Jim Nottingham – page 28.
- ◆ Educational jargon from Audrey Laski and Richard Rymarz – page 25.
- ◆ The winning font from our font competition – page 26.
- ◆ Files from Gerald Fitton's Column – page 45.
- ◆ Sample module program from Nicholas Marriott's Module Writing article – page 63.

Brother laser printer – Following a good report from one of our subscribers, Steve Godfrey, we have added a new laser printer to our price list. The Brother HL660 is a 600×600 dpi printer with 2Mb RAM and it runs at 6 pages per minute. Steve says that it works very well with the Laserjet4 definition file on !Printers 1.28 and he is very pleased with it. The Brother HL660 is available through Archive for £650 inc VAT and carriage.

Budget games – If you enjoyed Space Invaders and Rocket Raid on the Beeb, you'll enjoy two budget games from Generation Design. RoboCatch is Space Invaders with scenery. You don't get 3D graphics or a CD's worth of sound, but this is a budget game... it only costs £7.99 (no VAT – they're not registered) and it comes on two discs! You get nine zones, with five sub-levels, to complete. To gain points, you blow-up the aliens, then catch their cargo. Along the way, you can get 'power-ups' which increase your score and status. Overall, this isn't a game to last you a lifetime, but the bombs do blow you up... and you do actually get annoyed when you fail to beat your last high score.

In Caves of Confusion, you control a rocket flying horizontally through a cave. In your path are obstacles which have to be avoided or blown up. There are four increasingly harder levels. There's lots of fun, explosions and frustration, and all for £6.99 from Generation Design.

BurnOut – Oregon Developments have just released a new race game called BurnOut – a racing game like no other. Driving on tracks that have more in common with roller coaster rides than conventional race tracks, you must pit your skill and reflexes against five other dune-buggy drivers. You have twenty drivers to choose from, and ten different dune buggies. Racing takes place on an island split into ten areas with different scenery, such as woodland, beach, desert, canyon, town, mountains and coastal port. Each area has a number of tracks, three on the first area, rising to ten on the hardest. To qualify for the next race, you must finish in either 1st, 2nd or 3rd place. Tracks are constructed not only on the ground, but also on scaffold, logs, over or through canyons, and through water. BurnOut features arcade-style intro sequences with stereo music and sound effects

playing simultaneously during gameplay. BurnOut costs £24.95 inc VAT from Oregon Developments or £23 through Archive.

CineWorks CD – The new CineWorks video editing package from Oregon is supplied with a sample CD. The CD is available separately, as a demonstration of the product's capabilities. The price is £19.95, which is refundable against a purchase of CineWorks, when it is available.

Digital Symphony CD-ROM – Oregon have produced a CD-ROM containing 500Mb of Digital Symphony tunes, as well as hundreds of samples for use in creating your own music. The RRP is £29.95 from Oregon, or £28 through Archive.

Digital Symphony upgrade – Oregon have upgraded Digital Symphony to ensure compatibility with the Risc PC.

EasyFont 3 upgrade – Easy Font 3 from Fabis Computing has been upgraded to accept fonts automatically from Zenta Multimedia's new Font Emporium CD and the new iSV font pack. Anyone wishing to upgrade should return their original disc to Fabis with two first class stamps.

Ethernet Design and Installation Guide – This guide book from Acorn aims to help you through the stages necessary to set up an Ethernet network using Acorn equipment by giving you the information you need to discuss your plans with network specialists so that they can design and build the network you require. It is for network managers intending to install an Ethernet network, either a new network, replacing a slower system, or extending an existing network. It does not teach you how to design or install the network yourself. The price is £20 through Archive.

Fast IDE Interface – RapIDE Risc PC, 32-bit DMA-based Interface for the Risc PC. The Interface provides vastly increased throughput over the Risc PC motherboard. Using alternative drives it is possible to achieve reading speeds in excess of 8Mb per second using 32-bit direct memory access. It provides two IDE ports, allowing up to four devices to be connected, including IDE CD-ROMs. RapIDE Risc PC Interface costs £99 +VAT +£5 p&p, from Yellowstone Educational Solutions.

Products Available

Faster Risc PC 486 cards – Aleph One have limited supplies of their variants of the PC processor card for the Risc PC. Currently Cyrix 486DX2/66 or DX40 processors are available. The cards co-exist with ARM610, 700 and 710 processors and, like the Acorn PC card, share the Risc PC memory and peripherals. The DX2/66 costs £399 +VAT and the DX40 costs £349 +VAT from Aleph One.

Geordian protection systems –

Geordian Systems have two products to protect developers from computer piracy. Geordian Lock allows developers to protect their own software using a keydisc system. Geordian Installer offers the ability to protect software which has been installed to a hard disc by ensuring that it will only run off the hard disc to which it has been installed (although the software can be freely moved on that hard disc). If the user needs to move the software to a different medium, the software can be uninstalled and reinstalled to a different drive. Contact Geordian Systems for details.

Insight 95 – Acorn are putting on a residential conference for head teachers, department heads, IT coordinators and anyone involved in planning or implementing educational IT strategies. The conference includes two days of training; four 90 minute sessions on the first day, and three on the second day. Topics include, planning and implementing IT strategies, training in the use of Acorn RISC OS computers, software and network systems, and use of popular RISC OS packages from third parties. There are almost 100 sessions to choose from, covering a wide range of packages at different levels.

The conference is being held at the Hinckley Island Hotel on Friday 14th and Saturday 15th July. The cost is £499, but bookings received before 26th May 1995 qualify for a reduced price of £249 +VAT (£292.58 inclusive). The price includes all meals plus accommodation for the night of the 14th July.

For those unable to attend, Acorn offer a range of courses at their training centre in Cambridge.

Details can be obtained from The Insight 95 Administrator at Acorn.

MacroLife – Macrolife is a desktop version of the famous game of life, invented by the British mathematician John Conway in 1970. It displays a scrollable window onto a Life plane, or grid, onto which you can place patterns of cells and watch how they evolve. 'Life' is a fascinating game in which patterns of cells on a two-dimensional plane evolve, according to a simple rule. Despite its simplicity, Life patterns can behave like living organisms, moving, growing and even – theoretically, at least – reproducing and evolving.

A copy of the full program can be obtained by sending a cheque for £8 to Chris Taylor, 7 Prideaux Place, London WC1X 9PP. If you are on the net, he can email you a copy (without the printed manual) for £7. Chris will then donate four pounds to Motivation, a charity which designs inexpensive wheelchairs and organises their production using local materials in countries which cannot afford commercial models.

Money Manager – This is a new accounts package from Wynded Software, designed for home or business use where there is the need to store all financial transactions in an orderly way. Often only a simple mouse selection is needed, although keyboard shortcuts are available as you grow more accustomed to using the package. Capable of storing up to 500 transactions in each month (6,000 in a 12 month data file). Easy-to-use reporting facilities are included, allowing the specification of which accounts should be used. Reports can then be exported to almost any wordprocessor or DTP package.

NetReader – NetReader, from Digital Phenomena, is an off-line reader for Usenet messages downloaded from Internet Conferences. The package is shareware (£10 registration fee). Private and newsgroup messages are supported; message files should be in "#! news" format. Facilities include auto expiry of messages, and automatic signatures.

NoticeBoard – A new version has just been released by The Really Good Software Company. Notice Board is the electronic display system which enables sequences of poster-like displays to be run on unattended monitors. The advanced version of

Bankrupt Stock

Last month we bought up some stock from a company that was closing down. The following are still available – please ring **01603-766592** if you are interested in any of them.

N.B. All items are brand new (12 month warranty) unless otherwise marked.

(We have also added in one or two of our own bits which we want to sell off!)

New Computers & monitors

ACB45 (9Mb) Risc PC with AKF85 – £2466 → £2200

ACB25 (5Mb) Risc PC with AKF85 – £2114 → £1900

A3010 (1Mb) with Action Pack software – £299 → £260

A3010 (1Mb) with Learning Curve software – £299 → £260

A3010 (2Mb) with Early Years software – £399 → £350

Old computers & monitors

A3000 (2Mb) RISC OS 3.1, RGB monitor, HCCS SCSI card – £250 (S/H – no warranty)

Podules & add-ons

Midi interface for A3000/3010/4000 – £53 → £30 (S/H – no warranty)

HCCS User Port / Analogue – £46 → £23 (S/H – no warranty)

Dual 3½" floppy drives in external box – £25 (S/H – no warranty)

CD drives

Morley dual speed SCSI drive, caddy loading, for Risc PC. £290 → £195

Ultimate dual speed (ex-demo) external drive +A5000 type interface. £263 → £170 (no warranty)

Mac SCSI CD-ROM – £50 (no warranty)

Removable drives

105Mb internal IDE drive (with 1 cartridge) – £370 → £240

Refurbished 105Mb external SCSI drive (with 1 cartridge) – £410 → £210 (6 month warranty)

105Mb cartridges (if bought with a drive) – £60 → £50

Software

TouchType – £49.35 → £30 (See last month's offer – page 3)

Schema 1 – £125 → £40 (upgrade to Schema 2 is about £60)

NoticeBoard has an improved front-end for easier page setup, and an option to use fades between pages whilst the program is running. Current users can obtain an upgrade by returning their existing disc to RGSC. The new version is £35 inclusive.

NStore 4D – H.S. Software have updated their National Curriculum record-keeping package. Automated report writing has been added, and the package includes the latest (1995) level descriptions

in all the subjects, for both primary and secondary. NStore 4D costs £44.95 inclusive, and includes a manual and two program discs, sufficient for six classes of 36 children. Additional program discs for use in the same school are available for £3 each.

Upgrades are available for existing users (£4.70 from version 4.0, £16.95 from version 3.0 – you need to return your program disc, or quote your disc registration number when ordering).

Outline fonts from iSV – iSV aim to produce a new item each month. Among some of their latest releases are two outline fonts packs (277 and 298). The fonts are mostly PD versions from the USA. iSV have converted them, added scaffold lines and kerning data, and packaged them for the Acorn market. Many of the letters have been re-drawn and missing ones included. In pack 298, there are 39 families, each with Regular, Oblique, Condensed, Condensed Oblique, Extended, Extended Oblique (about 273 fonts). Pack 277 contains 14 families with about 120 fonts. The packs cost £25 each, or £45 for the two, from iSV Products – p&p £1.50.

Plantwise – Those who have seen the quality of Sherston's Bodywise software will be pleased that their next offering, Plantwise, is now available.

"Plantwise allows pupils to explore all aspects of plant life in highly intuitive and informative ways." It covers the major part of the National Curriculum requirements for green plants as organisms at both KS2 and KS3, and can be tailored to present easier or harder text as required. The pack includes search cards, experiment sheet, user's manual and a guide to using the software in the classroom. Plantwise costs £44.95 +VAT from Sherston or £50 through Archive.

Rocket for your Pocket – ExpLAN have created a set of spreadsheet datafiles for the Acorn Pocket Book and Psion 3/3a computers, for use in Science, Maths and Technology. When used in conjunction with a Payloader rocket, it enables pupils to track the rocket's flight using a hand-held protractor device, and calculate the height with the Pocket Book. The datafiles contain formulae to calculate the average height from multiple readings, filter out erroneous measurements, calculate the burn-time for a given engine and calculate the thrust and acceleration. The payload carried can be varied, and a graph of mass against height can then be plotted. Further details from ExpLAN.

Spelling Book – Spelling Book, from Creative Curriculum Software, is aimed at users from 4 years old and upwards, provided they need help with their spelling! It integrates with any word processor on every Acorn 32-bit computer and is easy to configure and use.

It is not a spell checker, but rather, a computerised spelling book. When activated, dictionaries are instantly integrated in alphabetical order. Dictionaries responding to curriculum needs can be simply and quickly created, and a number of preset dictionaries are supplied with Spelling Book. Also included on the disc are three spelling games: Wordsearch, Fireworks and Art Gallery. Single user £39 +VAT; site licence £89 +VAT.

Textease templates – PaperSoft Ltd have just produced a selection of templates for use with Textease. The first two selections contain 100+ templates for Paper Direct Business Papers and 40+ templates for Paper Direct Fun/Theme Papers (they cost £24.95 and £14.95 inclusive, respectively). For label printing, there are templates for Avery laser, and Avery b&w and colour inkjet labels (the laser label templates cost £14.95, the inkjet labels cost £7.95). Finally, there are templates for Avery's indexing system. The template disc includes precision software for each of the IndexMaker and ReadyIndex sheets, and for each number of divisions (5, 6, 10 and 12). Label and Index discs also contain a small clipart library of useful label and indexing icons.

Trip – This package from Creative Curriculum Software has been designed to provide assistance with the organising of school visits at home and abroad. It is a purpose-designed database application for the trip organiser, which can also be used to illustrate, for educational purposes, the practical use of a database. Trip handles all the accounts relating to a school visit – deposits, staged payments, special prices, payment for optional activities, etc. It also stores all personal details required – emergency addresses, dates-of-birth – and records items received, (passport, medical information, etc). It costs £14.95 +VAT from CCS.

VersaTile – VersaTile, from Dial Solutions, is a tiling program designed to encourage students of any age to explore geometry. The aim of the software is to allow investigation of 2D shapes with the minimum of restrictions, yet to utilise the computer's power to provide a dramatic increase in accuracy and productivity over conventional paper, pencil and scissor techniques. It is a flexible tool that allows tiles to be drawn easily and manipulated in a

similar way to moving shapes around on a table. VersaTile comes on two discs, and includes Oak Solutions' !DrawPlot and !DrawPrint, plus a disc of examples.

VersaTile costs £45 +VAT for a single user, £100 +VAT for a primary school licence and £200 +VAT for a secondary licence from CCS.

VideoTrak – This new release from the Really Good Software Company should be welcomed by video enthusiasts keen to get their video collection organised. Once details have been entered into VideoTrak, you can browse through the catalogues and easily locate any film by title, actor, director, etc. With all categories fully cross-referenced, just selecting, for example, an actor's name will provide a list of all his or her films, with instant access to detailed information on individual films and which tape they are on. VideoTrak costs £15 inclusive from RGSC.

Wing chair pricing – The kneeling chairs that we have been recommending (see Archive 8.3

p4) are going up in price to £340. However, I have one in stock (black base with grey upholstery) at £290. Give us a ring if you are interested – first come, first served.

Review software received...

We have received review copies of the following:

- CDFast (for Networks) (u), •Macrofile (e),
- Money Manager (u), •More Talking Stories (e),
- NoticeBoard (m), •Outline fonts from iSV (u),
- Spelling Book (e), •Trip (e),
- Textease Templates (u), •VersaTile (e),
- VideoTrak (u) •Vzap (u).

e=Education, b=Business, bk=Book, c=Comms, g=Game, h=Hardware, l=Language, m=Multimedia, u=Utility, a=Art.

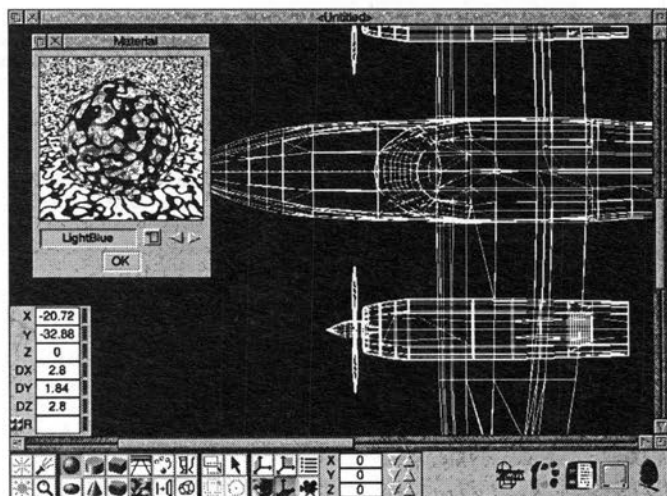
If you would like to review any of these products, please contact the Archive office. Potential reviewers will need to show that they would use the product in a professional capacity or that they have some knowledge of the particular field. ♦

Merlin

The Magic of Raytracing

- 3D editor
- material editor
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- phong shading
- Fast integer arithmetic
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- antialiasing
- photorealistic results
- Draw, DXF (3D) and native import

price: £ 100 plus VAT
available: May 1995



Minimum requirements: 2 MB RAM, RISC OS 3, harddisc

**EVOLUTION
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It's time to
get *sensitive*
about the way
you create
your graphics

.....

Many computer users feel that a graphics tablet is more natural to use than a mouse and without doubt it gives a much faster, smoother and higher resolution response. The mouse remains functional and can be used at the same time as the pen — however the pen has such a natural and precise feel, you will probably prefer it for many operations such as moving windows, drag and drop, region selection etc.

The new (approximately A6) ArtPad tablet offers a superb specification, even by Wacom standards; resolution exceeding 2000 dpi, 200 samples per second and 256 levels of pressure. All Wacom tablets include a cordless pen for added ease of use and flexibility.

The tablets are pressure sensitive, so in combination with suitable applications they can produce realistic effects such as variable width (the Eesox ArtWorks pressure sensitive tool) or variable density airbrush painting (PhotoDesk). The Computer Concepts's drivers will be compatible with these and other software that can take advantage of the pressure information, such as Studio 24 and DA Picture.

Computer Concepts can supply the tablets with either Photodesk or the Eesox Pressure Tool at special prices. **PHOTODESK** is a photo retouching package from Spacetechn, which offers a wide range of advanced image manipulation features; for example an airbrush, paintbrush and magic wand, full 24 bit colour support, the use of virtual memory, OLE with Impression, complete undo, effects such as colouring, toning and masking, motion blurring, cloning and smudge and smear.

The package contains the Wacom tablet (A6 ArtPad, A5 or A4) and manual, a cordless pen, Computer Concepts driver software suitable for all models of Acorn RISC computer (A3000 must have serial port upgrade) and PC drivers. Requires 1Mbyte or more.

Price: A6 ArtPad & drivers: £169 + VAT (£198.57 incl.)

A5 tablet & drivers: £399 + VAT (£468.82 incl.)

A4 tablet & drivers: £549 + VAT (£645.07 incl.)

ArtWorks Pressure Tool with tablet: add £10 + VAT (£11.75 incl.)

PhotoDesk with tablet: add £125 + VAT (£146.87 incl.)

ArtWorks Pressure Tool: £39 + VAT (£45.82 incl.) PhotoDesk: £169 + VAT (£198.57 incl.)



Computer Concepts Ltd

Help!!!!

Acorn DTP – I want to print out an A5 booklet by printing onto both sides of A4 sheets, folding and stapling. Simple. Can Acorn DTP do it?

Charles Morris, 30 Southcourt Road, Cardiff, CF3 7DB. (01222-490766)

Alternative Risc PC keyboards

After several attempts to learn to touch-type using a keyboard tutor, I have given up in disgust. I find that, after 20 minutes sitting in the 'recommended position', my wrists and arms begin to ache and I rapidly revert to my two-fingered approach. Since I seem to be incompatible with the PC type keyboard, the next best option is to find an input device more suitable to me. Has any reader had experience of / problems in using, one of the Microsoft Natural keyboards on the Risc PC? Does anyone know of any other alternative (ergonomic) keyboards? I recall that some years ago the Maltronic(?) keyboard was going to revolutionise typing.

Ashoke Patel, Ilford

Basic Wimp Programming book

This Dabs Press book by Allan Senior is now out of print. Does anyone have a copy that they would be willing to donate? I have a customer who wants to buy one and if you donate the book (and disc) to me, I'll sell it to him and give the money to charity. Any offers?

Ed.

Christian PD – I am going to be setting up a PD library for the Christian Acorn Users Group. This will cover clipart, resources, etc. If you have any material, please send it to me on 3½" disc. Thank you.

Andrew Bower, 60 Barcheston Road, Knowle, Solihull, B93 9JT

Development software – I have recently started reading a book by Paul Overaa, on program design techniques using Warnier diagrams. Does any Archive reader know of some suitable software

(one or several bits) that will assist in producing these Warnier diagrams. The Warnier technique relies on using sets of curly brackets that define a group of operations and the order that they are to be performed.

Ashoke Patel, Ilford

Graphing software – In the past, a number of my graphing applications have been distributed by Norwich Computer Services at various times on several of the NCS Shareware or monthly discs. Since the Shareware discs are no longer available, I have collected all these applications together onto one disc. The disc can be obtained direct from myself at a modest charge of £4. This registration fee entitles the user to upgrade at any time to the latest version. The many users who are already registered can, of course, upgrade to these latest versions in the usual way.

The applications included on the current disc are !GraphDraw, !MultiPlot, !ChartDraw, !FNPlotter, !Surface, !3DFnEdit, !Text>Draw. GraphDraw allows data to be fit, for example, to a straight line, a polynomial or spline curve. MultiPlot allows a number of curves to be superimposed on the same graph. ChartDraw allows the production of bar and pie charts. The 3D surface plotters are still under development, but are functional. The package is available from:

Chris Johnson, 7 Lovedale Grove, Balerno, Edinburgh, EH14 7DR

Microwriter – I have used a device called a Microwriter since I was in secondary school. I used it for taking notes in lessons or as an alternative keyboard for generating text before transferring via Commstar II, into View on the BBC Master for final polishing. I have now bought an A3010 and want to continue using my Microwriter in a similar fashion. I would be grateful if anyone could let me know if there is any suitable software available.

John Rees, Swn-w-Nant, Stuart Street, Treherbert, Rhondda, CF42 5PR

More TurboDriver problems – My computer setup consists of an A3010 (2Mb RAM, floppy only), AKF17 and Canon BJ200, usually running Impression Publisher or Draw. Recently I started having problems with the TurboDriver version 4. When I start printing anything more than a few Kb in size, I get an error message, "LZW code too large (StreamSquash)". I have tried talking to CC but they say that there is nothing wrong with the driver, and that my problem is unique! I would be very grateful for any assistance.

Islam Uddin, London

Mouse operations – I am trying to help an arthritis sufferer to use a mouse. Most difficult are click and drag operations. I am aware of Warfarin that replaces the mouse with ALT+keys but what I am looking for is the ability to move the mouse but assign keyboard keys (without <shift> or <Alt> – perhaps the top three of the numeric keypad) as the mouse buttons. Can anyone help?

John Thorn, Cardiff (GBAXA5RF@IBMAIL.COM)

Printing drawfiles – How can I print a drawfile as a header from within Basic at the top of the sheet, and not have a form feed, so that I can then print my Bridge results (see H & T, p 50) all in one go? I can draw it from Basic using the PDriver commands, but it insists on doing a full page instead of the limited rectangle I require.

Also, does anyone know of a PD program that will edit the modern non-squashed 'PrinterDefn' files as the original one did?

John Wallace, Crawley

Risc PC drives etc – We have had a request regarding several matters which may be of general interest, so if anyone would like to answer them for the magazine, we would be most grateful.

Can someone explain what the Enhanced IDE, Fast SCSI and Wide SCSI disc formats are, and how they relate to future developments of new machines from Acorn? Can any of these be used already on the Risc PC and, if so, what is needed to use them? Will it be possible to add SCSI-3 to the system when

the specifications are finalised? Also, is there any news regarding the PCI adaptor to allow PCI expansion cards to be added to the Risc PC?

Chris Walker, Norfolk

Squashed lines on printouts – When printing, I find that, every so often, my BJ300 printer will produce a squashed line of text, about one per page. I was going to ask whether this was a known problem with the printer, because a colleague has had similar problems and, since we have the same printer, we assumed that it was that causing the problem. Then I noticed the same effect very occasionally in Archive, so it looks as if other printers may be vulnerable. Does anyone know what causes this effect, and whether anything can be done about it?

Danny Lawrence, Nottingham

Squirrel 2 transfer – Does anyone know if it's possible to unlock Squirrel 2 from one machine and install it on another (I'm about to upgrade to a Risc PC and Squirrel is locked onto my A5000's ID number)? Digital Services, who used to produce Squirrel, seem to have disappeared, and left users with this problem. Does anyone know if Squirrel has been taken over by another company, as it would be a shame to lose such a useful program?

Jon Aylwin, 4 St Margarets Close, Hemyock, Devon, EX15 3XJ. (01823-680111)

Transport from Winchester – A pensioner from Winchester has offered some BBC stuff for our charity-Beeb project. Is there anyone in the Winchester area able to help get the bits up to Norwich? Is anyone heading up to Norwich on business at some stage with an empty car who could actually bring it? Beryl says she has all the packing materials but it's almost a car-full so it would cost a lot to send by carrier. Any help offered would be much appreciated – please contact the NCS office or RepairZone (01603-400477) who are administering the scheme.

Beryl Orchard, Winchester

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RISC OS 3 **Turbo** D R I V E R S

VERSION

4

...more Drivers

The TurboDrivers have been extended to support new printers, including the Epson Stylus Colour and to be compatible with the latest versions of Acorn !Printers and the RiscPC.

...more Turbo!

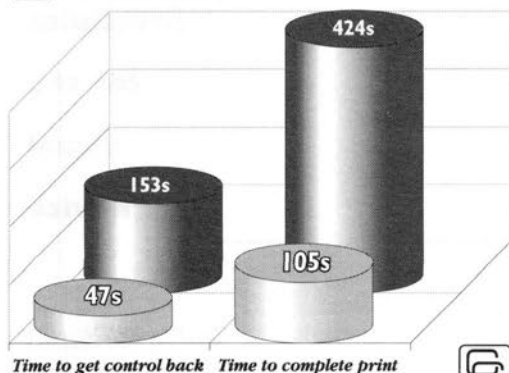
In the simplest cases, printing single copies of black and white documents, with little or no graphics, the TurboDrivers give performance gains of twice or more. However, for more complex documents, or multiple copies, or for colour documents the gains can be even more spectacular.

Our tests show that when printing two copies of a typical 3 page document, containing a good mix of font styles, Draw and Sprite graphics, TurboDrivers can give control back up to ten times sooner than the Acorn drivers.

Risc PC TurboDriver timings

■ Acorn !Printers

■ TurboDrivers



These tests are done with the Acorn drivers in 'background' mode (the new 'faster' way to get control back). When using the Acorn drivers in 'normal' mode the differences are even greater. The speed gains apply both to the older Acorn range and the Risc PC computers.

With the availability of new reasonable cost colour inkjet printers, and the increasing use of colour in printed documents, there is now even more reason to use TurboDrivers than ever before.

TurboDrivers Canon - £49 + VAT (£57.57 inc)

TurboDrivers HP - £49 + VAT (£57.57 inc)

TurboDrivers Epson - £49 + VAT (£57.57 inc)

Version 4 drivers require Risc OS 3.1 or later.

2 MByte RAM and hard disc recommended.

Please state printer type when ordering.



The graph shows the spectacular performance gains that are possible using TurboDrivers. These comparisons are made using the latest versions of !Printers, with a fairly complex single page DTP document (!MicroScope) on a colour inkjet and show that even on a Risc PC, the TurboDrivers can dramatically improve your printing performance.



Computer Concepts Ltd

Gaddesden Place, Hemel Hempstead, Herts, HP2 6EX Tel 01442 63933 Fax 01422 231632

CD-ROM Column

Andrew Flowerdew

I was going to do a CD-ROM Column last month but those naughty people at Acorn sent me a PC Card for my Risc PC and, well, I just had to play...

My first impressions of the way the PC Card handles CD-ROM software are very favourable. Most of the software that I have tried has worked, including movies, images, etc. However, since I have not received the sound card yet, I can't comment about sound. The only problems I have encountered so far have been in some of the introductory software on some magazine CD-ROMs discs. Also, some of the Dorling Kindersley software has introductory screens where the colour looks decidedly psychedelic. This seems to be cured when the software takes you to the main body of information where everything returns to normal.

I think it would be a good idea to try to compile a database of CD-ROMs which work, half work, or fail using the Risc PC PC Card and the PC Podule but, before we start, I would like to hear from readers what fields they think the database should contain, so please write or e-mail me with suggestions.

Installing a CD-ROM in a Risc PC

A few of our staff took advantage of the Acorn offer, just before Christmas, to buy a CD-ROM drive for £29 if you bought a Risc PC. The Risc PCs arrived before Christmas, although the CD-ROM drives didn't arrive until the last week of February. I recalled the computers to the computer room and opened the CD-ROM packaging. Great joy! There was a clearly written manual and well laid out components, right the way down to ribbon cables that were bent and laid out so that they would fit into the Risc PC correctly. The whole pack was so easy that I managed to install both CD-ROM drives into the two Risc PCs in less than 30 minutes. Well done, Cumana!

I spent a little while making sure the drives were set up and working well for their users and found Cumana's Speedy CD utility (supplied with the drives) easy to set up and use. I must admit that I

was pleasantly surprised by the speed and easy of use of the system and look forward to doing some raw tests on the drive in the future.

CD-ROM of the month

I hope that this section will develop into a way in which you, the reader, can let others know about CD-ROMs that you use and why you like them. I was going to mention the BitFolio Graphics CD-ROM but it was reviewed last month. However, it is one of those CDs which is so popular that I have had to put it onto a large hard disc on my network – it is used by large numbers of both adults and pupils.

So CD-ROM of the month is Treasure Chest, from NorthWest SEMERC. This is a CD-ROM of resources which is well laid out and has a clear and very understandable user interface. The CD contains a large number of graphics and sounds set out in topic areas, and the quality of the artwork is generally superb. It is very easy to use and is designed to allow access for special needs pupils. This CD-ROM sits on my network, working quickly and easily, and is a very useful resource for both teachers and pupils.

Grief from Scotland

I received a letter from Fred Grieve, a teacher in Scotland, who has had a rather bad experience with an HCCS Ultimate SCSI podule. Fred bought the podule partly to access PhotoCD drives, but found that he had problems accessing PhotoCD images on discs containing more than 80 images. He also had a problem with various other CD-ROMs, where the software would produce error messages when trying to access different parts of the disc.

When Fred contacted HCCS, they explained that the errors were due to a change in the firmware (the software held in the ROM chip inside the drive) made by Mitsumi, the company who make the drive. They also said that Armstrong Walker, the company who write their software, were working on a fix.

Although HCCS have offered Fred an upgrade to a newer, more expensive drive (for the difference in cost), he feels that their response has been less than

satisfactory, in that the errors that he has encountered have still not been sorted out and he does not want to spend any more money.

Fred finally gave up and ordered a Cumana SCSI II interface and CD-ROM from his helpful local dealer, Moray Micro, which he finds 'far superior' to the HCCS drive. However, the episode has left a very sour taste and Armstrong Walker have *still* got Fred's PhotoCD which he lent to them for tests.

The rights and wrongs of this case can be argued until the cows come home but it does highlight a few points about CD-ROM drives, interfaces and software.

Manufacturers of CD-ROM drives are continually trying to improve the performance of their drives and this often means a change in the firmware in the drive. This can have repercussions for the developers of interface software.

This is usually not a problem for companies who sell a specific drive/interface package, since the package as a whole should have been tested thoroughly before being sold. However, when purchasing a drive for SCSI interface, it is worth checking whether the drive is supported by the SCSI software which comes with the interface.

In general, if you are using SCSI, you should be using CDFS v2.20 or above. You then need a driver for the particular drive you are purchasing. So, for example, I use a Toshiba driver module from Morley to drive my two Toshiba drives and this setup works with both my Cumana interface and my creaking, old Oak interface.

The situation may become clearer with the advent of the Eesox SCSI II CD-ROM driver. This piece of software claims to allow any SCSI II CD-ROM drive to work with Acorn's CDFS. I hope to test it soon.

Digital video support

The table above shows the current state of play, as provided by Acorn's multimedia guru, Stuart Palmer. I will aim to update the list as time goes by and if anyone has any information which will help with this, please contact me via Archive or the address below.

CD-ROM drives and MPEG support

	GreenBook	WhiteBook
Cumana		
Panasonic CR562 IDE	No*	Yes
Panasonic CR562 Parallel	No*	Yes
Panasonic CL503 SCSI	Yes	Yes
Series 600 (Sony CDU561) SCSI	Yes	Yes
Morley		
Toshiba 3401		Yes
Toshiba 3501		Yes
Toshiba 4101		Yes
Sony CDU31A		
Sony CDU33A		
Morley		
MediaVision CDR-H93MV	Yes	Yes
Computer Concepts		
Pioneer	Yes	Yes

*These drives will support Green Book video, if provided with the most recent revision of the Panasonic firmware. This revision is not shipped by Acorn in the Multimedia Risc PC, but is available from Cumana as an option.

Green Book - White Book ?

The main standards for CDs are set out in various documents, known by different colours. The original standard was for CD Digital Audio and was known as the Red Book. This was followed by the Yellow Book, which set out standards for CD-ROM. The Yellow Book specification was later modified to cope with CD-ROM XA and multi-session Photo CD discs.

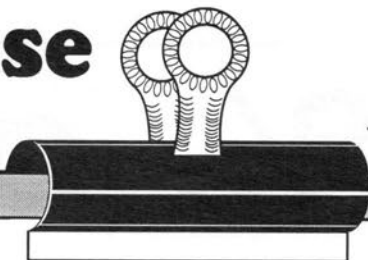
However, recently, two more standards were published, one by Philips called the Green Book standard, which was designed to lay down standards for CD-i players and another, the White Book standard, which covers the new Video CD system of MPEG1 full-screen, full-motion video.

In practice, unless you have a large number of old Philips CDi video CDs, the White Book standard is the most important of these two and you should certainly ask if the drive you are going to buy is White Book compliant.

As always, you can contact me via Archive or c/o DCPS, Cranbrook, Kent TN17 3NP or via e-mail on abf@dcpscran.demon.co.uk. ♦

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See **Archive** vol. 7 No. 11 page 65 and the August '94 issue of Archimedes World for reviews of Personal Accounts.

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◆ Archive Special Offers ◆



Datapower Database

- ◆ After the good review which Datapower received (8.6. p43), we have arranged a special offer price with Iota. The full price is £149 +VAT = **£175.08**, the normal Archive price is £160, but it is on special offer at **£120** – an excellent saving! This was to be for **for one month**, only but because the demand was so high, we have extended the offer to two months. ◆

"My final choice is Datapower. Whilst I dislike the copy protection method used (at least it is not as bad as Squirrel's), and although it is not a relational database, I found the lookup facility was adequate for my needs. The design process, reporting facilities and general look and feel of the program were such that I found myself turning more and more to this package as the review period went by. You will not be disappointed if you follow my example and purchase this program for your computer. Simon Coulthurst."

Textease

- ◆ We've also managed to arrange a special limited offer on Textease, the **budget DTP** package. Once again, the review (see last month – page 43) was very positive.

The full price is **£39.50** but for two months, it is on special offer at **£35**. ◆

Personal Accounts v3

- ◆ The full price of Personal Accounts is **£49.95** and the special price (for Archive subscribers only) is **£35**. The only difference with this special version is that, to save costs, it will not come in a presentation case. The offer was to be for one more month, but, again, the demand is so high, we are extending the offer for one more month. To take advantage of this offer, just send in your order for Personal Accounts to NCS in the normal way but simply do so at £35 instead of £49.95. ◆

Club News

The ARM Club is holding another Open Day. This takes place on Sunday, June 11th at Belmont School,

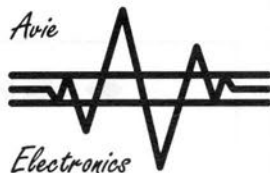
Mill Hill, London NW7. For more details, contact Ralph Sillett on 0171-624-9918. ◆

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Spares

Hard drive screws & shock mounts	£1.99	A300 main PCB (excl. OS)	£69.00
Assortment of popular nuts, bolts, etc.	£1.99	RISC PC second drive bracket	£4.99
1.44Mb floppy drive 3.5" (citizen)	£39.00	Mouse (Archimedes)	£14.99
800K floppy drive 3.5" (citizen)	£39.00	Mouse house	£2.99
Power splitter cable	£1.99	MEMC1a & PAL	£23.50
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Mains lead (IEC- free end/US/Euro)	£2.99	PSU (A300)	£59.00
VIDC or IOC	£29.00	PSU (A3000)	£39.00
FDC1772	£19.00	PSU (A5000)	£49.00
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Making Movies

Mike Battersby

I work for the Kingston Schools' IT Unit where we have recently been involved in translating the Map Skills CD-ROM (Key Stages 2-3) from PC to Acorn format. We have been working in conjunction with Pebbleshire Ltd (who published the original PC version) and Cumana (well known for their CD-ROM drives etc), who are publishing the Acorn version.

Although much of the objective was simply to translate the existing main elements, there was also the aim to enhance the application in its Acorn version in several ways. One of these was to add video shots of the locations used on the CD, so that the maps used can be related to videos (and still images) of the areas they represent, for the purpose of developing the understanding of the maps.

Producing the videos

This then raised questions as to what equipment to use to produce the videos. This article is not intended to be a full review of the two alternatives tried, but is an account of our experience and choice, based on what we were trying to achieve, and the constraints involved. The main concerns we had were that the replay movies produced should be of an "acceptable quality" and not require undue amounts of RAM memory to decompress. What constitutes "acceptable" is, of course, subjective but had to satisfy ourselves and the other two main parties involved. Since the movies were to be silent, the audio capabilities were not an issue.

Eagle + Eidoscope

The first system tried was the Eagle card from Computer Concepts, with the Eidoscope software for editing. Since we were concerned with the memory needed to decompress the movies, the only real option of formats was the Eidos compressed format which requires just under 1Mb of RAM to decompress. The uncompressed formats produced higher quality but require around 2Mb of RAM free for playing via ARMovie, which was much too much. Eidoscope is the only software available for editing the Eidos format movies.

The results produced an acceptable quality for commercial use, but only by a narrow margin. The pictures suffered from a narrow black strip along the side and base of the picture, which was not too drastic but annoying. It was desired to have a title "header" at the beginning of each movie which, for Acorn Replay movies, is commonly referred to as the "helpful sprite". The Eagle card automatically puts in its own sprite which advertises the Eagle card and Computer Concepts. Eidoscope replaces this with its own logo! The only obvious way to put in your own is to replace the sprite file inside either the application that produces the movie (if it is not to be edited), or the one inside Eidoscope. In either case the application must then be rerun each time the sprite file is changed. The Eagle card also adds in header information with a Computer Concepts copyright notice inside all your own movies! This header cannot be edited in the Eidos compressed format, though it can be edited in the uncompressed format, as alternative editing or compression software can be used.

However, the Eagle card did produce acceptable picture quality, and Eidoscope was quite user-friendly for editing pieces of video together, with the particular advantage of allowing various forms of cross fades etc, to join clips. Eidos, however, do not allow distribution of the compression and decompression modules for commercial use without agreement, though they can be distributed for non-commercial use. Since the project already involved the three parties mentioned earlier, plus Acorn (for ARMovie) and Oak Solutions (as it is a Genesis application and required the Software Developer's toolkit to allow commercial distribution), we were reluctant to have yet another party involved.

Irlam 24i16 + Empire

At this time, the Irlam 24i16 digitiser card appeared on the market so we decided to give it a try in comparison, using the Empire editing software from Uniqueway. The card allows movies in a variety of formats including a real time compressed format or various uncompressed ones. The image quality was distinctly better on the majority (but not all) of the

Making Movies

recordings made using the same source equipment and tapes as with the Eagle card. The uncompressed format required only marginally more RAM to display than the Eidos compressed format, and the real time compression format even less.

Further to this, the Irlam card allows hardware adjustment to take out any black stripes around the edges – a considerable advantage. As regards the helpful sprite, initially it is a copy of the first frame but this can easily be changed by dragging an alternative sprite onto an editing dialogue box. The written header information can also be set to the user's own wording from the save dialogue box.

The card can, incidentally, produce movies of varying sizes as against the fixed Eagle size, which could be a considerable advantage, though was not required for our purposes. It also provides more control over colour, contrast etc, and no permission

is needed to distribute the ARMovie modules for the Irlam card.

Editing with Empire was as straightforward as with Eidoscope (straightforward when you know how, but it takes time to suss out) and, while the quality of each seemed about the same, my slight personal preference is for Empire, for the way it displays strips of frames of clips, allowing you to see a sequence of frames on screen at one time.

Conclusion

In the end, because of technical questions associated with the use of Replay from CD-ROM, further compression/processing of the files is likely to be necessary but the above account does at least bring to light some of the important factors to be considered when looking at alternatives for making Replay movies and may, hopefully, be useful to others in a similar situation. ♦

Give us 'yer old Beebs & monitors

(and A310, A3000, A400, etc, etc.)

We have had an overwhelming response to our suggestion last month that we might re-cycle old computers and peripherals for charitable purposes. So PLEASE, if you have any old Beebs, Masters, printers, user ports, concept keyboards (especially useful for special needs applications), small hard drives, colour monitors, floppy drives, etc, etc just send them in to us at NCS. Potential users include: Downs Syndrome Associations, Mencap, Special Needs Departments in schools.

It won't cost you much to stick them in a big box, take them along to your local post office and send them by parcel post... we'll get them eventually!!! Alternatively, telephone Parcel Line, Target Express or any other carrier who has a depot near you (see your local Yellow Pages) and they will come and pick up the box from you for £10 or £15 or so (especially if you say it's for a charity scheme!).

If you are feeling really generous and have any old RISC OS computers of any vintage that you don't want, we can certainly find them a good home, so just send them in to NCS.

N.B. If any of the things you send don't work, please mark them as such – and send them anyway because we can probably put together two duff ones and make a working one.

Also, whether the items work or not, please mark the box **"For Charity Use"** – or we might think they have come in for repair, fix them and send them back to you with a bill for the repair costs!! ♦

The scheme is going well but we've got quite a few Beebs we can't use because there are no monitors... Any offers?

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Comment Column

Budget games – With so many £30+ games around which require thought, a manual, and skill... it's nice to be able to just load up a game and, within seconds, be whizz-banging around the screen shooting everything in sight. Okay, so you don't always get the kind of graphics that come in the big packages, but so long as it's fun and – dare I say – explosive, who cares? Well done to Generation Design for producing some budget games.

My all-time favourite Beeb game was 'Chuckie Egg' – even though my son is still the holder of the highest score in our house! What's your favourite Beeb game, and does it exist for the Arc? Indeed, what's your favourite budget Arc game? If enough of you write in, we could set up a fantasy league!

Gabriel Swords, Norwich

Calligraph Qume Laser Direct Interface – I took some time to get around to buying a Risc PC for myself since I had a CC Qume Laser Direct, which would not work on the Risc PC. I contacted CC on a couple of occasions, but it appeared there would be no upgrade forthcoming. I finally resigned myself to throwing the Laser Direct out, and bought a new Risc PC from Paul.

The Qume sat in the corner of the room very neglected for a few weeks, and I was relegated to doing all my printing at work. Then along came Calligraph and announced a new interface that would work, not only with their own early Laser Direct printers, but also with the CC version. It is not cheap at £130 + VAT, but that is a lot less than buying a new printer of comparable speed and quality.

I certainly have been pleased with the result. I can now make full use of all the features of RISC OS 3.1+ with rotated fonts, etc. Although I had upgraded the CC driver some time ago to what was claimed to be a RISC OS 3.1 version, I had never managed to get it to work properly with !Printers 1.22.

The new Calligraph driver is very fast and has a background print mode, whereby it prints to disc

first and then sends the data to the printer in the background (it starts the actual printing very quickly; it's just that the data goes to disc much faster than the printer can make use of it). Even in background mode, it still drives the printer at its rated 6 ppm, and control of the computer is regained very quickly.

The driver has a huge range of options, but I have not yet explored them very fully, since the one thing lacking is a complete set of instructions. I assume that the instructions come with the full printer package. Some of the half-toning and screening options cause some very strange effects, but it may be that these early printers cannot support the more esoteric screen patterns. Using the standard proof settings, I find the quality is very good, and would recommend anyone else contemplating a similar move to go ahead. It is worth the extra expenditure to have a fully functional laser printer again.

Chris Johnson, Edinburgh

Chess for promoting the Risc PC

In response to your request for ideas in promoting Acorn products, there is a field in which Acorn could get a great deal of positive publicity for a relatively small outlay. The words Acorn and Risc PC could even be part of the average lay person's vocabulary. The field I am thinking of is chess! Before you stop reading any further, hear me out!

The strength of chess programs is increasing all the time and although, at normal match-play speed, they are not at Grand Master standard, at speed chess they are very strong and are able to match and even beat the best human chess players in the world. In August 1994, the unthinkable happened; an £89 chess program called 'Genius 3', running on a Pentium 90 PC, beat Garry Kasparov, the human World Chess Champion, in the INTEL Speed Chess Grand Prix! The names Intel and Pentium got massive publicity in the next day's press – a master-stroke by Intel! I was asked by 'non-computer literate' friends what this 'Pentium' thing was that had beaten the World Champion!

If a strong chess program, running on an Acorn RISC machine, did well in chess competitions against human and Pentium opposition, people would sit up and take notice. No need for software comparisons on different platforms – we would beat them head on in direct competition!

As a keen club player, I have eagerly waited for a strong Acorn chess program to appear and have conducted competitions between programs to find the best. The results may surprise you. The best Acorn program appears to be Colossus 4, running on my trusty old BBC B, which beat Cyber Chess running on an A410/1! However, Colossus 4 is weak compared to even the average chess program running on an IBM type PC.

“So where are we going to get a strong chess program from?” I hear you say, but here too I have an answer! In the field of dedicated chess computers (i.e. those that come complete with processor, board and pieces) the most powerful in the world is the TASC R30 and, yes, you’ve guessed it – it contains an ARM processor! (Incidentally, three of the top five dedicated chess computers use ARM processors.) Now it surely can’t be too difficult to transport the code across to an Acorn RISC computer and bingo – a world beater! Then let’s beat the opposition head on in competition!

Rob Pollard, Guisborough

Chess II – Regarding the review of Chess II in the May edition of Archive, although David Pilling has done an admirable job, at a remarkable price, from my own and my son’s viewpoints (club player and county player, respectively), we were disappointed with the review, for two main reasons.

Firstly, a potential purchaser cannot tell how strong the program is from the review. The statement “I think the game plays more strongly than ever” is not good enough. As with any review, comparison tests should have been carried out; Chess II should have been made to play Chess, Cyber Chess and PC chess programs before its strength could be truly assessed. I have played Chess against Fritz 2 (a strong PC program, but by no means the strongest) several times and Fritz 2 beats Chess easily. Chess II

would have to be a lot stronger than Chess to compete at the same level.

The world of computer chess is big business – there are magazines which are devoted to assessing the strengths of the various programs and of dedicated chess computers, containing league tables (which, needless to say, don’t contain any Acorn programs), with programmers vying for the number one spot. Even IBM has its own dedicated chess computer, aptly named ‘Deep Blue’.

Secondly, to say the program is “fully recommended for novice, enthusiast and pro” by Tord, who freely admits to being beaten by it on novice and beginner level, is a rather sweeping statement. Enthusiasts and pros expect a lot from their chess programs to help improve their game. Strength aside, many other important features are usually standard in PC chess programs, such as an extensive and editable opening book, database of games sorted by player and opening type, move evaluation and best line display, post game analysis, etc. Cyber Chess had some of these features, but lacked the playing strength.

As I stated in my original letter (see above), the best dedicated chess computers in the world use ARM processors, so transferring the code to an Acorn machine would seem to be our best hope of producing a world beater.

Rob Pollard, Guisborough

Tord replies...

I agree that it would be good to compare Chess II with PC or Mac programs but (a) this is an Acorn magazine and (b) I only own an Acorn computer. Being overseas and unemployed doesn’t help, so if anyone would like to send me computers and chess programs to test, I’ll accept them willingly!

I have done some testing against Chess, but Chess3D and Battle Chess are not multitasking and so, with only one computer, I can’t pit them against each other. For the earlier review, I set Chess against Colossus 4 on an Amstrad CP/M machine. This was a walk-over for Chess at almost any level, so I am amazed to hear Rob’s conclusion that his ‘best’ chess game is Colossus 4 on a Beeb.

I stand by my review of Chess II. Many better chess players than me approved of Chess, and Chess II is a considerable improvement in many ways, and it's certainly well worth the money.

If Rob can afford a Risc PC plus a PC with Fritz 2 which, most likely, costs more than *two* copies of Chess II, I am sure he can afford a copy of Chess II as well. Rob, why not risk(!) a few quid and try out Chess II for yourself?!

Tord Eriksson, Sweden

Clan Acorn Column – Would anyone be interested in editing a Clan Acorn Column? The idea would be that, as editor, you could be in close contact with Chris Cox, Acorn's Enthusiasts Sales and Marketing Manager, and keep Archive readers informed about what is happening in the way of enthusiasts seminars, etc. You could also keep an eye on the comp.sys.acorn group and feed things out of there into the Column.

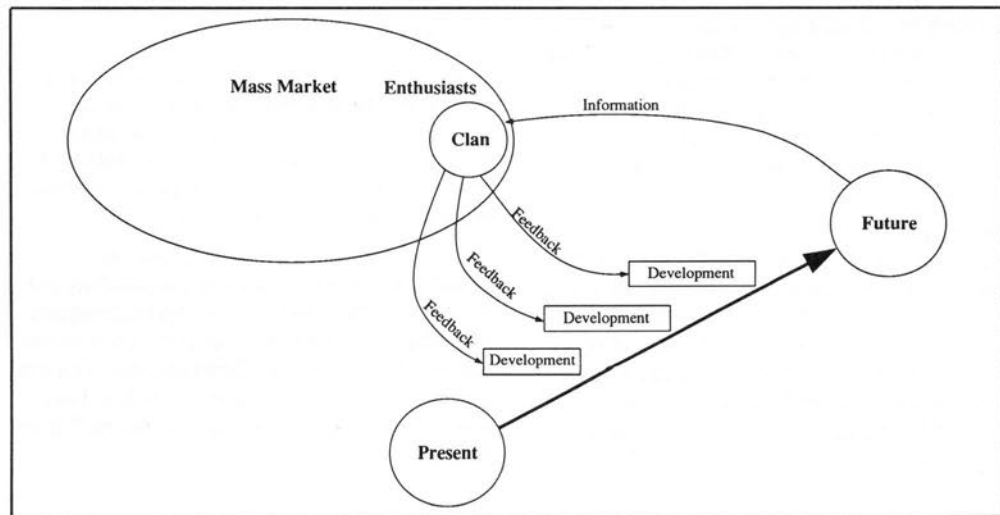
Also, Chris gave a very good briefing to the press about his (Acorn's) vision for what could be achieved by Acorn enthusiasts in the way of promoting Acorn's products and guiding Acorn's future development. It would be good to share some of these ideas with the Archive readership, but sadly, being so short-staffed, I only have time to edit the magazine and not to write articles.

The diagram below is an illustration of how Chris sees the enthusiasts at the leading edge of the market and how, by two-way communication, they could influence the future development of Acorn's technology – a very bold concept which I very much doubt would ever be used by any other computer company. Can you imagine IBM actually telling people some of their development plans and asking them for their opinions of where they should be going in the future?!

I believe that it IS worth sticking with Acorn, it IS extremely interesting and exciting (albeit also very frustrating at times!) and I for one won't be deserting Acorn yet a while. Actually, editing Simon Coulthurst's RiscDOS Column this month made me *extremely* glad that I don't have to be "industry standard"! I couldn't *believe* all the technicalities he had to get into with Windows and networking.

Ed.

Database exchange scheme – There must be many Archive readers who have databases of interesting facts and figures created with various database applications. How about sharing your databases with other members? Paul has suggested that I run the database exchange scheme, which I would be willing to undertake.



If you have any databases that you would like to share with other Archive members, please take the following action:

Send me your files as saved by your database application. Also send me CSV files of the same data. Make sure that every disc you send me has your name and address firmly attached and the name of the database application that was used to create the files. Please send me, as well, 25 pence in coins and a return address label for the return of your disc. If more than one disc is being sent, please add the extra postage. (Please do *not* send me stamps for the return of your discs.)

After a pause of three or four weeks, while waiting for your database material to arrive, your disc(s) will be returned to you with a list of all of the database files received to date. You may then return the list with your chosen databases marked on it, with blank, formatted disc(s).

It should be pointed out at this stage that one or two commercial database applications available for the Archimedes computers (e.g. Squirrel), allow the use of multi-line text fields. If your particular database application does not have this type of field available, you will not be able to import CSVfiles into your database without serious loss of data. If you are sending databases with multi-line text fields, please mark this fact on the disc. You may also send me any interesting databases created with PC database software, as long as they are sent in CSV format.

The databases will be distributed free of any charge, and the supplier of each database will remain anonymous, if so desired. Any inquiries for database material must always be accompanied by 25 pence in coins and a return address label.

**Roger King, Malgré-Tout, Ruelle des Corneilles,
Cobo, Guernsey, GY5 7HG**

EasyFont3 – When using !EasyFont3, I am experiencing problems when trying to import a font from my hard disc. I am getting error messages relating to memory, both on disc and in the module area. The font directories on my hard disc are archived using !ArcFS2 – version 2.52. By copying the font folder(s) from the archived directory to a temporary unarchived directory and then importing

them into !EasyFont3, the problem disappears. Fabis Computing have been told about this and I am advising the programmer of !ArcFS2 of the details. There appears to be a clash of memory requirements here – far beyond my capabilities to understand.

Ted Lacey, Southampton

Educational jargon – Ed asked last month for something to help him with educational jargon. Well, through the Home and School Council, I have edited a booklet about educational jargon which will perhaps help. It is entitled “What does it mean?”, is written by Barbara Bullivant and Elizabeth Wallis, and costs £2 from the Home and School Council, 40 Sunningdale Mount, Ecclesall, Sheffield, S11 9HA.

Christopher Jarman, Winchester

Christopher, thanks for the copy of “What does it mean?”. It has enlightened me about certain things, such as SATs (Standard Assessment Tests) which are “national tests at 7, 11 and 14 to ascertain the level of attainment reached by pupils at Key Stages (q.v.) of the National Curriculum (q.v.)”. I now also know that “Sin Bin” is the “name sometimes applied to a Unit for disruptive pupils”! Thanks.

Audrey Laski and Richard Rymarz have also responded to the plea. They sent text on disc of their own little glossaries of educational terms. I have put these on the monthly program disc. Thanks to you, too. Ed.

The following letter was sent by Brian Kerslake to Computer Retail News – well done Brian – and I thought you’d like to read what he has to say. Ed.

Educational software is alive and well. It just doesn’t get the support it deserves.

I read Jack Schofield’s ‘Edutainment goes by the bored’ (Computer Retail News, 15 Feb 95) with some empathy and just as much disquiet.

He’s right when he says that ‘children have an amazing capacity to learn’. As an ex-teacher, now running an award-winning educational software house, I’d add ‘given good learning materials’ – which is what the real edsoft industry in the UK

(not the **Big Publishers** like Microsoft) provides. Uniquely, it is still populated by educators who are all responsible enough to push only an appropriate selection of products towards parents. The trouble is, these aren't the ones that the trade wants to stock.

Jack says that the personal computer can overcome lack of motivation by 'converting almost anything into a game'. Well, that might be what's supposed to happen, but I might disagree on the definition of a game. Is that really the kind of software to lead us into the next century? What's in the shops right now reflects pretty well the sort of stuff that was on sale back in the early eighties when those BP's last moved in. 'Pick a skill, wrap it up in a game like space invaders, and it'll sell,' thought the likes of Mirrorsoft. Well where are they now?

If we're not careful, the wheel will go full circle. Will jittery videoclips, tacked on animations and oodles of dull hypertext make CD a winner? Probably. Discs will get bought (or bundled) but, as Jack says, the important question is will parents come back for more? My guess is they won't. Too many titles suffer from poor design, and the platform they run on: most PCs really are sluggish beasts.

In Jack's article, there was precious little mention of the very real success that British educational software houses are having worldwide. Perhaps this is because many of us have deliberately restricted most of our development activities to Acorn's amazing machines. That's right, Acorn, a British company which has been selling, internationally, powerful multitasking RISC-based machines since the late eighties and long before Apple ever took the risk. If you think multimedia on a PC is something special, try it on Acorn's new Risc PC that you'll find in a growing number of British schools. Quietly matching their success are the comparatively small UK edsoft houses who grow by mail order and word-of-mouth repeat business. Repeat, business – which we're still in, despite poor retail support.

But things are changing. Some schools are now going the PC route, because 'these are the systems that kids will meet when they leave school'. I beg to differ – by the time the present generation leave school, the rest of the world might just have caught up. Unfortunately, we can't stand still and wait for

Acorn to sell its superb machines into homes and businesses in the manner they deserve. Most of us are porting appropriate (that word again) software onto PC-'compatibles'. Now we can offer kids the chance to use successful school software at home.

So there will soon be a lot of proven high-quality educational PC software around. Betsi (4Mation) – an interactive adventure set in Tudor times – was enormously popular in its Acorn incarnation at the recent Interactive Shakespeare Show at London's Barbican Centre, and is now available on the PC. The Acorn version of Music Box (Topologika) was awarded Britain's premier software award at BETT '95; it too is now available on the PC. And there's plenty more coming ...

But will parents be able to find these educationally stimulating programs in the shops, or will the trade instead go for the quick buck, just like it did in the eighties? It's in your hands. I'm just sitting here watching the wheels go round and round...

Brian Kerslake, Topologika

Font Competition – Unfortunately, there was only one entry in our font competition and so the choice of prizes goes to Mrs. A.M.W. Demarteau-v.d.Moosdijk in Best, Netherlands for her Nigra font which contains 153 characters. Congratulations Mrs Demarteau for a very stylish font.

Christopher Jarman, Winchester

Foreign characters – I've at last found a more satisfying solution, quicker than using the default Alt keys, as described in the Acorn A4000 Welcome Guide, p.41 or the !Chars utility. You can use your <alt> and/or <ctrl> keys together with the vowels which you wish accented, in conjunction with two utilities called 'IntKey' and 'Accents'.

Double click on the !IntKey application, which can be found on the RISC OS 3 support disc. Load W.D.Hine's !Accents utility (found on the tools, 'Nice Disc' from Evolution Computers). Choose the language on the menu of !Accents from the iconbar menu. The keyboard will now obey the key combinations as shown, if you click on Accents on the iconbar. Unfortunately, you cannot restore the

default <alt> key values by choosing the default option in the menu of !Accents. You will need to do a hard reset, or enter the following commands

```
RMKill InternationalKeyboard
RMReinit InternationalKeyboard
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Valdo Richard, Switzerland

Iiyama's good service – I recently bought a Risc PC and a 17" Idek Iiyama monitor from NCS (who helped me overcome initial teething problems – thanks). Although the picture was beautifully sharp, there seemed to be a degree of bending of vertical lines, particularly noticeable on one side of the screen. No amount of fiddling the controls would remove it so, at NCS' suggestion, I rang Iiyama direct and was given a very understandable explanation of why a certain amount of distortion of vertical lines was inevitable, due to the attempt to 'square' the screen.

I was also offered the option of returning the monitor to Iiyama at any time during the first 30 days for a replacement or a full refund (via the supplier). I haven't decided on my course of action yet but am going to try to compare with a number of similar-sized monitors at work first. Iiyama's attitude is commendable and has certainly put my mind at rest.

Peter Smith, Whaley Bridge

Internet – After last month's comments, can I also point out that Compuserve offers a good connection to the 'net as I found out by reading an old Archive review of !Arctic by Richard Proctor (7.2 p55). (I've sent the demo version to Paul for the monthly disc.) The advantage of the system is that the software is very good, is Risc PC tested, and Richard is planning on expanding it as Compuserve expands its Internet capability. (He is writing a Usenet application specifically for Compuserve.)

For those of us remote from big towns, phone bills are minimised by log on/grab/log off. It costs me about £7 a month and there is a very active Acorn group on UK Computing Forum section 8. Whilst it is very American in flavour, it has allowed me to send small articles to the Citroen Car Club mag in

Wellington via the Internet and Apple's dealer system and the cheap e-mail is invaluable! To join ring 0800-289378 (+44-272-760681).

Ned Abell, Kidderminster.
100341.2765@compuserve.co

Internet access – Following my comments last month, Nick Smith from ANT Ltd pointed out a couple of errors in what I had written.

Firstly, the maximum serial port rate on pre-A5000 machines is technically 19200 baud. That is true, but, when working through RISC OS, connections may not be totally reliable, which is why I gave the 9600 figure. He does think that a 28800 modem is a good investment, although 14400 is perfectly good, for a few quid less.

A5000 or later machines can drive the serial port at 57600 baud, although this can only be used by accessing the hardware directly. Risc PCs can drive the serial port at 115200 baud, making a 28800 modem more attractive.

Matthew Hunter, NCS

PC compatibility – I concur with Anthony Hilton's comments (8.8 p50), that software houses should concentrate on providing PC compatibility, though I think a separate multifunction utility to convert between Acorn and the desired PC software format would be more practical. The problem with providing PC compatibility within an Acorn product is that PC software manufacturers seem to revise the file formats each time they 'upgrade' (?) their software. Since their systems are revised every 12-24 months, it would probably be more effective if the conversion were handled by a separate utility which could be upgraded as frequently as necessary.

To put my money where my mouth is, and reinforce a comment in Keith Hodge's column (8.6 p69), I would have preferred to invest £80-90 in such a piece of conversion software rather than buy a PC card! Having heard, from some of the privileged few who are owners of the first Risc PC PC cards, that 12-16Mb of memory is the minimum needed to run both Windows 3.1 and RISC OS simultaneously, I am even more convinced of the efficacy of the

software approach. I have a 10Mb (8+2) Risc PC and the further investment of £145 for a memory upgrade makes the PC card very expensive, i.e. £116 PC Card, £60 approx. for Windows 3.1, £145 memory upgrade, total £321, assuming you have an ABC 45 (even more if you're starting with a lower-memory Risc PC) and that's before you buy a copy of your chosen software.

I would be interested in comments from software houses as to why they have not attempted to provide some sort of basic compatibility with PC software. Having said this, I understand that the Eureka 3 spreadsheet does import and export spreadsheets from various flavours of Lotus 123, (almost a 'standard' spreadsheet interchange format), and Excel (though only up to Version 4). If this supported Excel 5, I would be the first in the queue for a copy. As an aside, on PC platforms, the DBase format appears to be a 'standard' exchange format for databases, while Lotus 123 for spreadsheets, though lamentably ASCII, is still the only reliable text exchange format, and as for graphics formats...!

Ashoke Patel, Ilford

Risc PC genlock – Millipede Electronic Graphics demonstrated an AlphaLock genlock overlay adaptor for the Risc PC at the Acorn World Show and soon will release the product in two versions, at a price of around £750 + VAT. I mention this because this might be the first genlock for the computer, and the demonstration I saw was to the highest standard. The two versions will be ready in "about six weeks" (which would be about the end of May) and the demonstration boards are being sent to both Lindis and Clares for evaluation with their !CableNews2 and !Tidler software. I only wish Paul Reuvers and Rob Davidson would get together to program a joint effort!!!

The two boards will be a PAL/NTSC composite and S-Video board with linear keying mixer and a board that is component video without the mixer.

I'll review the product as soon as I've bought it!!

Ned Abell, Kidderminster.
100341.2765@compuserve.co

STDFinder improved – In order to get v2.01 of !STDFinder onto the monthly disc in time for PhoneDay (Archive 8.8 p67), it went out with a known limitation. This has now been cleared in v2.02 which is included on this month's disc. In addition, thanks to the efforts of Mr Frank Peddie, two extra files are added to the 'Directories' folder. These are the modified international codes and London sub-codes, including Mercury numbers.

Once !STDFinder has been loaded, dragging a new data file to the icon bar opens an option window, allowing the new data to replace or be merged with the existing Newcodes data. If desired, the result may be saved for future use. If all data files are merged, there are some 6,700 lines of data (!) but processing is still near-instantaneous.

As far as I know, and thanks to the work of Julian Bristow, Ted Lacey and Frank Peddie, !STDFinder is the only utility which not only has all the post-PhoneDay codes, but also the majority of other recent BT changes, typically brought about by the installation of digital exchanges. If you don't get the monthly disc but would like a copy of !STDFinder, it is available from The Datafile PD library or, alternatively, from me on receipt of a formatted disc and return postage.

Jim Nottingham, 16 Westfield Close, Pocklington, York, YO4 2EY

TableMate 2 – As a regular user and big fan of TableMate 2, I entirely endorse Dave Floyd's very positive review in Archive 8.8 p73 and his wish-list for justified text and simple spreadsheet functions. The latter would be very useful as, presently, although it is easy to prepare data in a spreadsheet or database and import it to TableMate, were we to modify and reimport the data, it would then be necessary to re-apply all the TableMate styles such as column widths, font names/sizes, colours, etc.

In dealing with another problem recently, I fell upon an undocumented workaround procedure which enables the majority of the basic style information to be retained. Having got a complex table just as I wanted it, I found that if all the cell data was highlighted and deleted, the basic table layout was

retained. This included parameters such as rulers, tabs, column widths, joined columns, line widths, metrics and so on. I was then able to save this 'blank' table for future use as a template. This allows me to modify the original data within a spreadsheet and re-import it directly into the TableMate template, leaving me to re-apply only a limited amount of style data. Saving the template takes only a few moments and can save much fiddling later on.

This unexpected bonus surfaced while helping to solve a problem for Peter Bond. He had produced a complex table, and subsequently wanted to apply major modifications. This proved to be near-impossible because, although data can be typed in manually, or imported in CSV, TSV or SID formats, it cannot then be exported in these same formats for major modification in, say, a spreadsheet. However, between us, we discovered it was feasible to export the data in DDF format, load the result into !Edit, filter out all the TableMate 'scribble', massage the data type into the desired format (e.g. CSV) and export it to a spreadsheet or wherever. This was a one-off procedure as, having done it, Peter was then able to modify the data, whenever required, and re-import it into a blank table template as described above. It follows that, if there is any likelihood you will need to modify tabulated data at any point, it would be better to do this in a spreadsheet or database and export it to TableMate, rather than entering the data directly.

If anyone has data 'stuck' inside a table and would like to export it for modification, please send me a copy of the table on disc and a note of which output format you require (CSV or TSV).

Jim Nottingham, 16 Westfield Close, Pocklington, York, YO4 2EY

Word processing on Acorn and PCs

This comment is prompted by John Molyneux's comment in the May edition of Archive (p46), but it is not about his problem, which I would guess is fairly specialised. It is rather that the whole tone of his remarks about, in this case, WordPerfect (and his 'amusing' deformations of the name) is very common among Acorn users, and it does us no good at all. Quite apart from sounding like the whinging of an oppressed minority, it completely overlooks

the point that the relationship of WordPerfect or Word, to any WP or even DTP program on Acorn is, in many respects, that of a Massey-Fergusson tractor to a pedal-car.

I should say right away that I have been an Acorn enthusiast ever since I got a BBC B – then an Archimedes 440 (still going strong with PipeDream 4) and now the Risc PC, which beats any PC in all sorts of ways, except for word-processing. Things which you take for granted in WordPerfect simply don't exist in, for example, Fireworkz or, from what I read, the main Acorn DTP packages either. This does not mean to say that Fireworkz may not be better than WordPerfect for many things (such as variable-format tables or importing spreadsheet data or graphics, though even these can be done in WordPerfect), if you need to use a computer mainly for writing reports and other documents, and for editing in a mix of French, German and English. So the lack of some essential facilities means that I am stuck with the PC, even though I would much rather use the Acorn side of the Risc PC.

What are these essentials for a report-writer? In the following list, the top two are the real *sine qua non*, though the others can be very useful.

1. Automatic paragraph numbering (as used here). In WordPerfect, I can use one of four pre-defined styles down to eight levels each, or define my own style. If you are constantly shifting, inserting and deleting paras, you really can't do without this.
2. Footnotes and/or Endnotes. I don't use these so much, but in certain documents they are essential. For example, in any sort of research, and when I am preparing notes for a talk, I often use both.
3. Undo and Undelete (the latter to three levels) – very useful for quick moving of text. (This is not the same as cut-and-paste.)
4. The ability to see what codes you are using and where precisely they are located in the text, as in WordPerfect's "Show codes". I have tried to correct a phrase in Fireworkz like "Archive amazine" and kept ending up with "Archive magazine" because Fireworkz wouldn't let me place the cursor between the end of the italic and the start of the second word. WordPerfect does let you do this, but "Show codes" makes doubly sure.

5. Load from / Save to different WP formats. I know that, in Fireworkz, you are meant to be able to use Rich Text Format, but this doesn't seem to work. From Fireworkz to WordPerfect, you get a blank screen, though the text is definitely on the file, and from WordPerfect to Fireworkz, you get the most peculiar results: - italic and bold not closed off, hard returns and first words after them deleted, auto-para numbers translated as underline, etc. I think that this is partly WordPerfect's fault. RTF is just not a very good translation but it lists nine other WP formats, all in several versions, plus ANSI or ASCII text in various guises, and these do work. When you're dealing with a good number of authors, as I am, this is essential if you are to read their discs.

6. User-definable F-keys and keyboard. This can be done in both PipeDream 4 and (with greater ease) WordPerfect. In the latter, you can have up to 72 commands, out of a vast number available on F-keys, with one keystroke each (counting <shift-F1>, etc as one stroke), and you can re-define the whole keyboard in as many versions as you want, as I have for foreign characters. If you are a frequent user, keystrokes are *much* quicker than using the mouse.

7. A much greater range of foreign, mathematical and other characters, insertable straight into any text, without altering the font you are working in, though you can easily do that also in WordPerfect without having to use 'styles', which I find pretty cumbersome.

8. User-definable button-bars. This may be possible in Fireworkz - it is very useful for common commands you don't want on your F-keys.

9. Drag-and-drop a marked section for copy/move within the text - much faster than cut-and-paste.

10. Indent or double-indent all lines of a para until the next hard return. This is not the same as Tab, which only indents the first line. I think this can be done in Fireworkz, but with one keystroke?

11. Add comments to the text which are visible on the screen but which do not print out - very useful for reminders, for REMs à la Basic, etc.

There are, I suspect, a good number of other things which WordPerfect can do which Acorn WPs cannot but these are the ones I use frequently. I am

sure that one day Fireworkz Pro et al. will include many of these functions but, until they do, let us not slag off WPs which have them already.

This comment was, of course, typed in WordPerfect and sent to Archive as hard copy + an Acorn disc with a plain text version (losing all highlighting and special characters) and an RTF version (see para 5 above!).

Christopher Wightwick, London

Here is a brief and hurried reply from John...

If Christopher has been offended by my mention of any particular program, I apologise. I intended the 'humorous' names to be taken lightly. However, he seems to have missed the point of my original letter. The message was that file transfer on PCs is fraught with incompatibility problems. If he thinks that this is the whining of a minority, he should hear some of the comments that fly around the office when transferring graphics between IBMs.

I was amused at the thought of WordPerfect as a tractor - to my way of thinking, it's a slow lumbering tractor! My wife, her secretary and some of my colleagues (all of whom don't use anything other than IBMs) have all abandoned version 6 of WordPerfect for the increased speed of 5.2.

I can't comment about Fireworkz, but the two essential attributes for Christopher's type of report seem to be paragraph numbering and footnotes. The first is a technique I wouldn't personally use except in a very rudimentary sense in my technical reports - can anyone really *need* eight levels? "For further details, see section 1.6.2.1.5.iv.a.ii"?

As to his second and subsequent points, Publisher, which I regularly use for text work, can do most of what he intimates is missing. Why would you want to edit style codes? With WYSIWYG, you can see where they change. Publisher can also import many foreign file types with ease.

P.S. This was written on a Pocket Book whilst walking the dogs, because Paul only gave me two days' notice to compose and return a reply!

John Molyneux, Runcorn

Writing Your Own Book

Philip Woodward

Preparing material for a proper book publisher may seem a far cry from DIY desktop publishing, but the two activities have much in common, because work is more acceptable when presented tidily, whether addressed to a publisher or directly to the public. I have just finished a semi-popular book entitled 'My Own Right Time', for publication by Oxford University Press in July, and I thought Archive readers might be interested to know how I set about all the writing and drawing with an A5000 using TechWriter, Draw and Hatchback.

The text

After much thought, I chose to prepare the text using TechWriter, mainly because it copes wonderfully with equations, printing minus signs as proper minuses, not as hyphens, and spacing things in a thoroughly professional manner. I had already bought Desktop Publishing on the Archimedes by Bruce Goatly, an informative and sensible book which enabled me to appreciate for the first time the real difference between word processing and desktop publishing. Although only twelve pages of this book are devoted to EasiWriter (upon which TechWriter is based), those twelve pages were invaluable in overcoming the initial hurdles. Bruce Goatly spoke to me in my own language rather than that of the manuals.

I did all my numerous drawings with Draw, without which I could not have written the book at all. For my own convenience, I decided to embed the drawings in the text, in spite of the fact that all such placings would eventually be discarded if the book were accepted for publication. The publishing house would start again from the raw material and impose its own house style. However, I happen to know that the way I had presented the material did create a favourable impression (with a small 'i'). The combination of Draw and TechWriter proved a happy partnership, as TechWriter has the facility named Object Linking and Embedding (OLE), which enables one application to be called from within another. Double click on a drawing in the text, and the uncropped original pops up with the

Draw toolbox alongside. Saving puts the revised drawing back into the text.

Not being strictly a DTP package, TechWriter structures the text rather than the page. A picture – along with its caption – cannot be set in a fixed position on the page. It counts as a paragraph of the text. Consequently, after a heavy edit, a blank can occur when a picture is too big for the amount of space left on the page. This I am quite happy to correct by drag-and-drop editing.

Although TechWriter will align the text at left and right-hand edges if wished, I chose to have the right-hand edges ragged (as in Archive, since the May issue), and to mark paragraphs by extra line spacing rather than by indents (also as Archive). The payoff with TechWriter is the possibility of inserting a picture within a paragraph, or appearing to do so. You simply take a new paragraph at the end of a line in mid-sentence, and there insert the diagram. The reader is unaware that a new paragraph has been taken. This subterfuge does not work with fully justified text because the line immediately before the picture cannot be made to stretch to the margin. With care, it is possible to go further and make text flow round the side of a diagram by writing it as a side-caption, but except for the purpose of showing off, I have found this much too troublesome. Wisely, TechWriter makes no claim to any such facility.

Shading the illustrations

As may easily be imagined, some drawings of clockwork mechanisms can be made clearer by shading, which is where Hatchback came in so useful. Hatchback will replace any coloured area in a Draw picture with black-and-white hatching suitable for monochrome printing. Many patterns are possible, but all those in Hatchback are based on parallel lines, grids of lines (cross hatching) or circular dots. At first, I thought I wanted the dots, but at high density, their generation is extremely slow, so I never use them. There is a simple answer, surprisingly never mentioned in 4Mation's otherwise excellent little manual. All you do is choose a diagonal cross-hatching with black and white reversed. Hey presto, you have an array of little

square black dots, whose frequency and density can be adjusted to give the appearance of any desired shade of grey. Advice from the publisher is needed to ascertain a safe frequency for this dot pattern to survive the printing process.

To the printers...

Once a book has been accepted by a publisher, and a quantity of champagne drunk (not squirted into the computer), we have a problem. The first book I ever wrote, more than forty years ago, was sent to the printer in my very own handwriting, and the compositor was happy to work straight from that. Nowadays, it is becoming the norm to submit material on disc, which is where problems start. Would a TechWriter file be acceptable? (This was TechWriter version 2.01, not the new TechWriter Professional which offers output in a portable TeX format.) Guessing not, I prepared a plain ASCII file for each chapter on a DOS-formatted disc.

Then, helped by a friend with an IBM-compatible PC, I discovered that characters in the range 128-159 are by no means standardized. All the characters on the keyboard are safe, as are those needed for French quotations, but not such simple essentials as inverted commas and dashes. For instance, a single inverted comma is character 144 in Acorn fonts, but 145 in Times New Roman for a PC/Deskjet combination. Taking a leaf from Goatly's book, I encoded all my single opening quotes as double primes (") and all my single closing quotes as single primes ('). This enables the desired text to be reconstructed by editing, apostrophes and all. Conversational dashes (en-rules) I encoded as a pair of hyphens (--). All highlights were lost, as were mathematical equations, so these would have to be edited in from the printed copy.

Confronted with this somewhat primitive disc, OUP requested the Acorn disc I had actually used, but my original guess proved to be correct. They went for the DOS disc with the ASCII text. There is no denying that we in the Acorn world are out on a limb when it comes to communication. Will the Risc PC solve such problems - other than by capitulation?

Presenting the drawings

As for drawings, I chose to provide all my artwork on paper, as printed by my Bubblejet printer. At 2.5 times larger than final size, there was little trace of moire patterns between the Hatchback dots and the pixels of the BJ-10. The first thing OUP did was to scan these drawings into their own computers, which left me wondering whether I should have offered everything in PostScript. The Oxford University Press are so courteous and adaptable that I did not feel like asking gratuitous questions!

Not all the illustrations in my book are drawings. Some are computed graphs captured as sprites. In mode 29, with a resolution of 800x600, the lines are too spidery for good clear book illustrations, but a lower resolution mode shows the pixels up too clearly and loses information. To overcome this difficulty, my trick is to paint the screen four times over, sometimes by choosing four different origins, e.g. ORIGIN 500, 500: PROCplot: ORIGIN 502, 500: PROCplot: ORIGIN 500, 502: PROCplot: ORIGIN 502, 502: PROCplot. Another method, using a single origin, involves drawing each

My Own Right Time

An exploration of clockwork design by Philip Woodward, Silver Medallist of the British Horological Institute, to be published in hardback this July by Oxford University Press.

ISBN 0198-565-224

Describes in simple language the scientific problems of precision timekeeping in the age of the pendulum, with a whole chapter on computer simulation of clock performance.

This is 'an important and scholarly work which will prove to be a landmark in our horological literature'

Jonathan Betts, Curator of Horology
at Greenwich.

part of the graph four times over. My own graph-plotting package includes this as an option. The resulting bold lines with fine pixels is just what I want, but surely somebody has a labour-saving program which will replace each pixel in a bitmap by a cluster of four in a square? The software supplied by Computer Concepts with Scanlight256 carries out similar manipulations, but I have not yet

succeeded in making it do just what I have described. Can anyone oblige?

I hope this has given a bit of an insight into what might be involved in producing a book for a publisher using Acorn computers and software. If anyone has any further experience, ideas, suggestions, etc, please write in and let us know. ♦

The Talking Animated Alphabet

Richard Rymarz

The Talking Animated Alphabet adds significantly to the ever-growing library of programs specifically designed for pre-school children and early learners at Key Stage 1 (5-7 year olds). Written and produced by Sherston Software, this program tackles the three basic skills of letter recognition, visual letter discrimination and aural letter discrimination. Presented on four 800Kb discs, the program is easily loaded onto hard disc, with the usual key disc used as protection.

The programs

Clicking on !Alphabet installs the program on the icon bar, and a further click fills the screen with the opening page, offering the following:

♦ Visual letter discrimination

The aim of this activity is to ensure that the child can distinguish between the shapes of the letters. It is suggested (mainly for the parent rather than teacher) that the child first learns to recognise the difference between simple shapes such as squares, triangles, circles, etc. Knowing the names is not essential – just being able to match the shapes is. Once this is mastered, the child can move on to Talking Animated Alphabet.

The control screen (activated at any time by pressing <ctrl-T>) is very comprehensive. There are three levels of difficulty since some letters are more difficult to recognise than others. Further, the teacher/parent can customise the letter groups to provide very individual programmes of learning. Finally, the number of tries can be set. Click on OK and the activity springs to life with a beautifully

designed screen: a marbled backdrop with decorated balloons in the corners and the appropriate letter-shapes scattered around. The target letter is boxed and a huge mouth appears in the right hand corner. A very clear voice tells the children the task. The child then has to click on the appropriate letter. If there is a delay, he/she is asked again; if wrong then a, 'No! look again!' is heard. Three wrong guesses and a polite, 'No! Never mind. Try this one.' leads the child onto another letter. Once the letter is correctly chosen, it zooms to a larger scale, the voice says, 'Well done, that's right.', the other letters disappear and two circular arrows invite the children to 'morph' the letter. Thus an 'e' turns into an elephant, an 'l' into a lighthouse, and so on. The next letter is then presented.

♦ Aural letter discrimination

The aim of this activity is to ensure that a child can distinguish between the sounds of letters. This takes the form of an 'I Spy' game where the children listen to the spoken sound and then click on the appropriate picture. Clicking on the picture morphs it to a letter. Thus an apple becomes an 'a', a jack-in-the-box becomes a 'j' and so on. The control screen allows the level of difficulty, the number of tries, etc, to be set.

♦ Letter recognition

The aim of this activity is to link the shape of each letter with its phonetic sound. It is suggested that only a few letters are used at first, gradually adding more as the child gains confidence. The picture opens the activity, which is then morphed into the letter. A spoken instruction asks the child to, "Find the letter that says 'g'," for example. Clicking on the

correct letter provokes the response, "Yes! This letter says 'g'." Three mistakes and another letter is offered. A simpler activity involves the morphing element only. All the expected options are available from the control screen.

The package

The Talking Animated Alphabet comes in the usual Sherston plastic wallet which now, thankfully, has a separate pocket for each disc. The excellent user guide skilfully takes the teacher/parent through the installation procedure, describes each activity in detail and, at the back, provides a welcome list of follow-up activities. Also enclosed are twenty six, coloured, A4 picture cards which can be mounted, and will provide a very attractive wall chart. Finally, there are three record sheets that can be used as a check-list for each of the three activities. All in all, the support materials should be very useful, as well as being impressively presented.

Conclusions

This program is great. Not only are the educational aims sound and clearly stated, they are executed with considerable skill. The look of the program with its 'schoolkid' font, backdrops and letter design, is first rate. The digitised sounds are crystal clear and the intonation natural. Gone are the days when robotic voices marred a good program. If I were to be over critical, I would say that, whilst the morphing of letter to picture is excellent, the animations are minimal and a touch disappointing. However, this is a small point in the overall structure of the program which is easy to understand, easy to use and, at today's prices, fairly easy on the pocket. Designed for both home and school use, it costs £35.20 or £33 through Archive, with a CD version promised for the future. Highly recommended. ♦

Small Ads

(Small ads for Acorn 32-bit computers (i.e. not BBC's) and related products are free for subscribers but we reserve the right to publish all, part or none of the material you send, as we think fit. i.e. some people don't know what 'small' means and there are certain things, as you can imagine, that we would not be prepared to advertise as a matter of principle. Sending small ads (especially long ones!) on disc is helpful but not essential. Ed)

I2 station Nexus complete with cards, cables & server, £1500. Phone 0181-547-6847.

4Mb SIMM for Risc PC £90. 210Mb IDE drive (Conner ex Risc PC) £90. Scanlight 256 £120. Phone 0646-622415 after 6.

A3000 4Mb memory, RISC OS 3.1, 20Mb IDE HD, Taxan monitor, Ovation, PC Emulator, Genesis, Almanac and lots of games £500. Phone/Fax 01732-454707.

A3000 4Mb, 45Mb Oak HD, 45Mb Syquest removable HD + 3 x 45Mb cartridges, Oak SCSI external interface, Acorn RGB monitor, Panasonic KXP1124 24pin printer + support plinths for

monitor and printer, assorted software, manuals and books. Cannot split. All v.g.c. £950 o.v.n.o. Phone Neil Berry (daytime) 0116-252-5060.

A310 1Mb twin 3.5in 800Kb floppies, RISC OS 2, Acorn black and white monitor, manual £120. Epson LQ850 24pin dot matrix and sheet feeder £70, 120Mb SCSI disc £80, MS-DOS 6.2 and Windows 3.11, discs only, £50, MS-DOS 6.2 and Windows 3.1, discs only, £45. ROM/RAM podule (64Kb + battery), Phillips yellow/white monitor, Schema 1, Acorn 2 slot backplane/fan, Acorn mouse, Electron Plus One £15 each. All excluding delivery. Phone 01827-330118 eves, w/e.

A4 portable 80Mb HD, Econet interface RISC OS 3.1 mains adaptor and case £900. Phone 01223-311881.

A4 portable 4Mb RAM, 80Mb hard disc, spare battery, carry case and tracker ball £1100 o.n.o. Contact Adrian on 01603-748253.

A4000 4Mb RAM, 80Mb hard disc, hi-res multiscan monitor, boxed with manuals. £650. Phone 01509-853166 after 4pm.

A5000 4Mb RAM, 40Mb HD, RISC OS 3.1, Colour Card Gold, all vgc. £750. Panasonic KXP 1124 £50. Pace Microlin fx Pocket fax modem £90. Phone Pete 01663-733027.

A5000 4Mb RAM, 40Mb HD, AKF50 monitor, Learning Curve, some games, manuals. £800 ono. Phone 0121-472-7006 (eves).

A5000 8Mb RAM, 120Mb HD, internal IDE 105Mb SyQuest (no cartridge), Eizo F550i 17" multisync. A highly capable system – can be seen at NCS. £1300 complete, or £400 for monitor alone. Phone Iain Cameron on 01463-751251.

A5000 4Mb RAM, 120Mb HD, RISC OS 3.1, Acorn Multisync, £800 o.n.o. ARcticulate £7, Enter the Realm £7, Sensible Soccer – International Edition £10, Archive Mousemat £1.50. Magazine coverdiscs (1991 onwards, ArcWorld, Acorn User and Acorn Computing) £1 each. Contact Jon Aylwin, 4 St Margarets Close, Hemyock, Devon, EX15 2XJ.

A5000 4Mb RAM, 40Mb HD, Econet interface, RISC OS 3.1, AKF18 multiscan monitor, £600. Phone 01223-311881.

A540, 8Mb RAM, RISC OS 3.10, 120Mb SCSI hard drive, Eizo 9060S multisync £850. Software includes Easiwriter, PipeDream 4 and Interdictor. Cumana 5¼" floppy drive plus interface £30. Phone 0342-714905.

AKF17 Acorn monitor, boxed and unused £65 o.n.o. Keyboard for A4000 boxed and unused £65 o.n.o. Phone 01706-852581.

Aleph One 486PC podule 4Mb/50MHz + floating point co-processor, !PC v1.69 + Windows acceleration software. Fits A400 series, Risc PC etc. £350. Phone James on 01954-210388.

Complete Acorn DTP System A410/1 4Mb RAM, 33MHz ARM3, 42Mb HD, Taxan 770 + 14" Multiscan monitor, RISC OS 3.1, Atomwide VIDC Enhancer, Qume LaserDirect 300dpi printer with spare drum (unused), ScanLight Plus greyscale scanner, Oak SCSI card, PC Emulator, Impression Publisher, Artworks, Compression, TurboDriver for HP Laserjet and Deskjet, Acorn C, clip art, extra fonts, all manuals, cables, some games, £1100. Phone Steve on 0181-560-0427.

Expansion cards Acorn Midi c/w EMR Studio 24+ (v2) £80, Aleph One 486PC (4Mb/50MHz) c/w latest software & Microsoft MS-DOS (v5) £400, GammaPlot (v2) £15, System Delta+ (v2) £25, Genesis (v2) £20, Christmas Allsorts £10, Prehistoric Animals £5, Bonjour de France – Ma Ville £20, Driving Test £10, Droom £10, Giant Killer £5, Healthdata £5, Help! £3, Telecommunications £8, Word Up Word Down £3, Genesis Script Language £5, MS-DOS Quick reference £5, RISC OS 2 PRM's £35. All original software with documentation etc. Phone 01737-832159 (eves + w/e).

FireWorkz Pro £100, ProArtisan 24 £100, complete boxed and manuals. Phone 01276-28932.

Games Saloon Cars Deluxe, Chopper Force, Black Angel and Lemmings. (All except Black Angel incompatible with Risc PC!) £8 each. Phone 01674-830895

Genesis 2 with script language handbook and manuals £59. Genesis Developer's Guide £25. Phone Roy on 01344-411252 (eves + w/e).

Impression Style inc latest TableMate 2, manuals and extra borders £70. EasiWriter v3.05 £80. Phone 0131-447-8624.

Psion LZ 64, 64Kb Datapack, two spell checkers and thesaurus, Commslink, mains adapter. Good condition, boxed + instructions £85 o.n.o. Phone 01332-557751.

PostScript laser printer – Star 300 dpi, 8 ppm, 2Mb RAM. Boxed with manuals, new fuser unit. Offers around £350. Phone 0115-981-3122.

Qume Laser Direct 300 dpi printer, recent new drum and one toner cartridge. Good condition £350. Phone Paul Cayton 01943-878133 (eves) or 0113-277-7711 (day).

Software: Artisan 1, Interdictor 1, Pandora's Box, The Olympics, E-Type, Repton 3, PipeDream 4, PipeLine discs Feb 92 to Aug 93, Flexifile, LC DTP, LC Genesis Plus, Personal Accounts 2 and DeskTop Thesaurus. Any offers. Phone David on 01752-781286 between 8 am and 8 pm. ♦

Spreadsheet Column

Chris Johnson

Eureka

I have had further confirmation from a number of users of the printing bug, where the last part of the text in a cell can be cropped. Most users who wrote treat this feature simply as a niggle, and generally take care to ensure that cell widths are adjusted so that the contents do not entirely fill the cell.

One correspondent has drawn my attention to what is a more serious problem, concerned with the printing of embedded bar charts. The problem appears to depend upon how the chart is selected for printing. When the print is carried out by selecting all the cells around the embedded chart and choosing Options > Set print area, followed by choosing Print, the chart prints normally in portrait or landscape mode, whether or not gridlines are printed, and so on.

The bad printouts occurred when the chart was selected by putting the pointer over the chart and clicking <select> while <ctrl> is held down. This selects the chart for editing. If the chart is then printed, the bar fills do not correspond to the border outline of each bar. The outline offsets further to the right with each bar going across the page to the right. In some cases, there is a vertical offset as well. On switching between landscape and portrait, the result is more disastrous, since all components of the stacked bars on the chart are printed in black. The effect can be created on a repeatable basis, although the two forms of the effect appear to change over between landscape and portrait on a random basis. The moral is that you do not print an embedded chart while it is selected for editing.

Another feature which has come to light is associated with changing the screen size while a sheet is open. Eureka appears to take no notice of changes to the screen size on going to a smaller screen. For example, if you are in a large mode (e.g. 1280x1024), and have the sheet covering a large area of the screen, then on changing to say 800x600, the sheet exceeds the screen size and spills over the edges. You may be able to find a button to resize the sheet size, but if, like me, you arrange the

edit window at the top of the screen, you may still find that the edit window is off-screen and cannot be recovered, unless you go back to the large screen. This is rather odd, since the WIMP window manager normally forces all windows on screen when a mode change occurs.

A further problem concerns the toggle icon at the far right of the edit window button bar. When going to a smaller screen, the button bar is truncated at the right hand end, so the toggle button is lost. This is not recoverable because, on returning to the larger screen, the edit bar is not resized to fit the new screen, so the toggle button is still unavailable. Even closing and reopening the sheet, or opening a different sheet, has no effect. Do users regularly change screen size, or is this a feature that very few users would ever come across? I have done this occasionally when going to a 32000 or 16 million colour mode on my Risc PC, which requires going down to 800x600, when I normally use a large screen mode with fewer colours.

The future

I feel that this column is tending to become a catalogue of relatively minor problems with Eureka, and I would not like prospective new users to get the wrong idea. I am very satisfied with Eureka in general, and think it is a very good piece of software. It has done everything I have asked it to do with very little problem, and is easy to use. I hope readers will use the comments to get the best out of Eureka, and to avoid such problems before they actually occur. Forewarned is forearmed.

I would prefer this column to be much more positive and constructive, so I would welcome suggestions as to how I could best provide something for everyone. Should the column become more of a tutorial on the use of spreadsheets, for example, or has Gerald Fitton covered spreadsheets sufficiently in his columns? In that event, it would be very helpful for readers to outline ways in which they make use of spreadsheets, particularly slightly unusual uses. Perhaps Paul has some ideas on the way forward? *(No, sorry! Isn't it better for the readers to tell us what they want to read? Ed.)*

How to contact me

My postal address is Chris Johnson, 7, Lovedale Grove, Balerno, Edinburgh, EH14 7DR; I can also be contacted by e-mail as checaj@bonaly.hw.ac.uk – please note the new e-mail address.

I am happy to receive anything in connection with spreadsheets, hints or tips, macros, problems, solutions to problems, or just requests for help. What would be of interest are examples of unusual uses of spreadsheets. ♦

RiscDOS Column

Simon Coulthurst

I recently had to pay for the PC486 card that is installed in my Risc PC. "Poor old you!", you may well be thinking, "at least you've actually got a PC486 card!" This is true. My reason for mentioning it, is that it illustrates that the hardware side of the product is complete, and that all that remains is to ensure that the software is finished.

IPC486 update

On the 17th of February, I received a new version of the PC card software. This new version (1.72g) now provides full support for direct parallel and serial port access. I was also informed that this was likely to be the last 'beta' version of the software. This being the case, with the hardware already being the 'final' version, it looks as though Acorn's proposed release date of early April 1995 will be kept to.

(We've had a few through – but only enough to fulfil about 20% of our back order list although the rate at which they are coming does seem to be increasing. Ed.)

My Risc PC 486 card is now two months old. I have had it long enough now for the initial euphoria, that comes with most new products (let alone one as important as this), to wear off. It is a sign of how good the product is that, after the initial setup and configuration period (the first couple of weeks ironing out teething problems and getting connected to our network), I have used it on a daily basis without really thinking about it!

(If you think about it, that is actually a very significant (under-) statement. Simon is transparently using a 486 processor, sharing memory and peripherals with a RISC processor. OK, so it's very overdue, but don't let that fact blind us to the technical significance of what Acorn and partners have achieved here. How many other

computers do you know that have this kind of dual processor arrangement working today? The "best of both worlds" is here at last. Ed.)

I am connected

When I first received the card, it had already been installed and setup on my Risc PC by Acorn. They had loaded PC DOS and Windows for Workgroups as well as some Lotus software for me to try out. This setup obviously worked well, and first time – as you would expect. It was not long, however, before I started tinkering with this setup in order to get it working the way I wanted it. This primarily meant gaining access to our server, which runs Novell Netware 3.12 (by far the most common networking software in general business use).

I had the standard Acorn Ethernet adaptor for the Risc PC already installed in my machine. All that was required to get my PC486 card connected to the network was a physical connection and the necessary software. The first part was easy – an extra length of cable with a T-piece connector. The second part was harder. Acorn, whilst providing both a PC card and a Ethernet adaptor, do not provide any software that would allow the two to work together. Rather, they have decided that third party solutions will be the order of the day!

The third party solution in my case was provided by Aleph One. They have a product, snappily entitled 'PC Network Drivers' (OK, so the title may not be all that original but at least you are left in no doubt as to what it does). Basically, this product allows the Ethernet adaptor in the Risc PC to emulate an NE2000 Ethernet adaptor when the PC486 card is being used. You can then use any standard DOS or Windows software that works with the NE2000 adaptor.

It works by using two relocatable modules, PCNE2 and ETHER3 (there are several supplied, depending on the Ethernet card being used). These modules are copied into the !PC directory on the Risc PC's hard disc. Then the !PC's !Run file needs to be loaded into a text editor, and the lines referring to the two modules (already present in the !Run file) need to be enabled by removing the '|' comment character at the start of each line.

Once this has been done, the PC software will need to be loaded from within the PC486 card environment. The commands needed on my own machine are as shown opposite. These commands are in a batch file called from my autoexec.bat file.

You will need a DOS NE2000 driver because one is not provided with the Aleph One software (though this may change). A word of warning here. I used, at first, what I thought was an NE2000 driver that had come with one of our NE2000-compatible adaptor cards in another computer. I got all sorts of problems trying to get my computer to connect to the server. Unfortunately, it was not immediately obvious that it was the driver at fault, and this resulted in a large amount of communication between myself and Aleph One. Once we tried another driver, it did work, and it was then obvious what the problem had been! So, be warned, make sure your NE2000 driver is compatible.

The software that allows this NE2000 emulation is available from Aleph One for £25 +VAT. I am sure that, if you ask nicely, they will also be able to provide a suitable DOS NE2000 driver as well.

Compatibility problems

At one point, I decided to try out one of the other Windows screen drivers, to see if the Acorn supplied *armdrv.drv* was responsible for a problem I was having with a PC CD ROM (see below). I installed the other driver using the Windows Setup program and this worked fine. However, when I came to re-install *armdrv.drv*, I found it was not listed under Windows Setup, and so could not be re-installed. The solution is to edit the *system.ini* file located in the Windows directory and replace the line that reads *display.drv=vga.drv* (or whatever driver you last used) with the line *display.drv=armdrv.drv*. This line is in the first [boot] section of *system.ini*. You

```
lh c:\netware\lsl.com
lh c:\netware\ne2000.com
lh c:\netware\ipxodi.com
lh c:\netware\netx.exe
@ECHO OFF
Q:
LOGIN SIMON
C: CD\
```

should always use the *armdrv.drv* file as it is responsible for a great deal of the speed that the PC486 card can achieve – using the Risc PC as an accelerated driver for Windows, when the DOS environment is in full screen mode.

After I had setup my PC486 card to run on our Novell network and then run the Network Setup program in Windows, I found that, on exiting Windows, I was left with no DOS prompt and just a flashing cursor on the screen. No matter how long I waited, I still could not get the C:> prompt back. The only way out was to re-boot by pressing <ctrl-alt-del> several times. The solution was to run Network Setup again, to remove network support from Windows, and then run it once more to re-install network support.

I was having problems with running a CD-ROM given away with the March issue of PCW magazine. Every time I tried to run the setup file, from within Windows, my whole machine would lock up. The solution was to disable 32-bit file access under the Virtual Memory control panel in Windows.

At first, I found that I was unable to run DOS programs, across the network, from within Windows. All I would get was a blank screen. Finally, I found the solution the problem which was to change to the Windows-supplied VGA driver and then back again to the *armdrv.drv* driver (see above). This forced Windows to install all the correct support files for DOS in a window.

Future strategy

Acorn have already stated that they are working on further enhancements to the Risc PC's PC486 card. Some of these will be in software, and thus will be available to all PC486 card owners as an upgrade. Others will be in a second generation hardware

product. The list of possible enhancements is as follows (actual details when known)...

Software

- ◆ 24-bit colour drivers
- ◆ Sound blaster emulation
 - 16-bit sample sound playback
 - Polyphonic Midi synthesizer
 - 8-channel 128 general Midi voices – R.A.M.
- ◆ Shared memory windows drivers
- ◆ Tighter Windows/RISC OS integration
- ◆ OS/2 Driver support

Hardware

- ◆ Committed to produce ASIC release 2
- ◆ Write back secondary cache controller
- ◆ Support for 512k SRAM
- ◆ Dirty cache buffer
- ◆ Deeper open bus write buffer
- ◆ Burst mode controller
- ◆ Ability to support many more varieties of 486 processors, e.g. AMD, Intel, UMC

And finally...

Thank you for the comments received following the initial review of the PC486 card (and my database

review). I have tried to reply to them all. If I have missed you, I apologise and will do my best to reply a.s.a.p.

If you want to see what the PC486 card looks like, and you are on the Internet, point your WWW browser at the following page:

<http://www.csv.warwick.ac.uk/~phudv/Htmls/pccard.html>

Or for more information, try...

<http://www.ant.co.uk/com/aleph-one/html>

If, like me, you are waiting with bated breath for a commercial Internet access suite on the Risc PC/Archimedes, you will be pleased to know that ANT Ltd are hoping to launch their (promising looking) *Internet Suite* in the 2nd quarter of 1995 – hopefully May. Let's just hope that ANT's definition of a calendar quarter is more accurate than Acorn's!

I may be contacted by email as: simon@agltd.demon.co.uk or by snailmail at Arnold Grimshaw Limited, 68a Armley Road, Leeds, LS12 2EJ. ♦

Speech II

Simon Weaver

Computer-produced speech has been around for many years in sci-fi films, teasing many people about just what is really possible from machines. Unfortunately, assuming it is even possible, we have many years to wait until a computer will be able to read our favourite novels or the news to us in the style to which we have become accustomed.

Superior Software have been working for many years in the speaking computer field. Starting with the BBC Micro and moving up to the 32-bit machines, its speech synthesizer, Speech, has received much praise. Available now is a new version which features a much improved dictionary, better quality of speech, a friendlier dictionary editor, interactive help, accented characters and four new phonemes for foreign language support.

How it works

For the uninitiated, a speech synthesizer simply attempts to read out any text that you care to throw at it. It can be used in a wordprocessor, Basic, ARM code etc, for just about any application where human speech is required (although licensing would have to be pursued for use in commercial products). The process converts English words to phonemes, which are the most basic sounds, like A in apple, and ZH in measure. The problems arise when you try to speak a word which doesn't sound as it is written, and that is where the improved 'dictionary' comes in handy. For instance, with the word 'through', there is a dictionary entry 'TH R UW', so that Speech doesn't pronounce it with a 'g' sound.

Speech II has some quite sophisticated rules to help the pronunciation and, if you feel up to it, you can change them. Luckily, this is not necessary for

nearly all users, but the support is there if needed. As an example, the rules allow Speech to correctly pronounce numbers up to 9999 and to choose the correct pronunciation of 'the', depending on the following word.

(Try saying "the book" and "the end" and you'll hear the difference. Ed.)

Despite a dictionary of several thousand words, it can be almost guaranteed that you will have problems pronouncing some words, particularly names, foreign words and technical terms. For example, Speech cannot pronounce "Risc PC" if it is typed as one word, and it is necessary to add it to the dictionary. Despite what Superior Software claims, changing the dictionary isn't quite as friendly as it could be. Adding a word involves dragging the dictionary file onto Speech, changing the words, opening the application directory and then saving a new speech module. There is no friendly menu option to edit words, but if Speech is to be used in a classroom environment, this may not be a bad thing if you don't want your dictionary scrambled!

When editing words, a list of phonemes is shown and, by clicking on them, you can build up the pronunciation. It is very important to use lower-case letters when you type in the word itself, and upper-case when changing the phonemes, but this isn't a problem once you realise the difference.

Speech quality

The quality of the speech is very good, and you can change many aspects to affect the tone and speed of the voice. You can also alter the pitch of individual phonemes to add intonation to words and even to sing! Unfortunately, unlike the much older ARCTiculate from The Fourth Dimension, it is not really possible to have a voice which sounds realistically like a female. In any case, ARCTiculate has a much less flexible dictionary and fewer phonemes, so I would now consider it out of date. By comparison, Speech II actually resembles closely the voice of the physicist Stephen Hawking and, though it may take a while to start with, almost any child will be able to understand it. Hawking's voice is generated by expensive hardware and so Speech II is an absolute bargain by comparison.

Other facilities

As well as the dictionary editor, Speech II also comes with spelling and demonstration programs to show off some of its capabilities. The best bit of the demonstration is to show the singing ability of Speech with a rendition of 'Daisy, Daisy'. This is impressive, and the manual shows the pitches corresponding to musical notes so that you can have a go yourself, though it is quite fiddly to get it right.

It is the spelling program which I feel lets Speech down somewhat. It doesn't appear to have changed much and a lot of the words are badly pronounced, e.g. 'sheep' sounded like 'jeep'. You can edit the words and sentences yourself, and this is essential for serious use. There is a full German version of Speech, and of SpeechSpell too, but all the instructions and progress comments are in English! It's true that my German is hardly up to scratch, but the German spelling program seemed far too unfair regarding initial capital letters, and the use of the German letter ß was confusing. Apart from that, though the German speech is very good, it is obviously not a replacement for a real German tutor. I wouldn't recommend it for people without a fair experience with 'real' German speech, in the same way as the English version isn't suitable as an English language tutor for two-year olds.

Conclusion

A speech synthesizer can have many uses and is suitable for just about anyone. It will integrate seamlessly into some word-processors and speak your work back to you, or it can be used in your own projects where sampling full sentences is too impractical. You can just drop a text file onto it and have it read to you. Thousands of primary school children are now used to having their work read back to them to check for those difficult-to-spot but easy-to-make mistakes, and it is equally suitable for any computer user who needs their work proof-read by someone/thing else. Apart from a couple of minor niggles which do not get in the way of its purpose, Speech II is excellent and, at only £29 inclusive through Archive (or £33 for German Speech), it is very good value.

An upgrade is available from Speech I by sending £10 to Superior Software. ♦

PD Column

David Holden

You may have wondered what happened to the APDL competition. There has been rather a long delay in making the final choices, at first because there were a couple of late entries, and then because some of the programs had bugs and I wanted to give the authors time to fix them.

If you are a PD/Shareware author and have missed out this time, don't despair. There will be another competition, and I will accept entries at any time. If you are interested, *don't* just send your program. First send a blank, formatted disc with a self-addressed return label and a stamp to the APDL address and I will return it with a copy of the rules, plus a lot of useful information on how your program will be judged.

Now to the winners of the current competition.

ClickBack

This has been awarded the first prize of £100.

ClickBack is a superb hard disc backup utility from Steve Spry. It has all the features you would expect of a commercial program. Full, differential or incremental backup, compression; it can backup to floppies or another hard disc, backup only selected directories or files; it can exclude any directories or files, not compress some filetypes to save time (e.g. ArcFS or CFS files); password protection, etc. The restore can be to any drive and you can also retrieve individual files or directories, so you don't have to go through the full restore procedure if you delete something by mistake. Because it can backup and restore to and from any filing system, you can use a Syquest drive as the storage media, and it *should* work with any third party hi density interfaces.

There is a good manual but, in fact, ClickBack is very easy to use, and you won't have to re-read it every time you want to make a backup.

ClickBack is Shareware, with a registration fee of £10. This is extremely good value for such a comprehensive program, only a fraction of the price of equivalent commercial products, but there is another good reason for using ClickBack. All of this

money is given to the Cancer and Leukaemia In Childhood Trust, which explains the name of the program. I did not allow this to influence my decision as I felt that programs should be judged entirely on their merits, but I hope that it will encourage you to use it.

Tiger

This is the winner of the second prize of £40.

Some people find that the limit of ten characters for a filename or directory is rather limiting. Tiger is a utility by Graham Crow which helps to overcome this problem. It displays a window in which you can enter a description up to 110 characters long – which should be enough to identify any file.

In use, Tiger displays its own filer window which, as well as the file icon and filename, shows the full description of each file. You can run programs from this window and, in fact, it behaves in a similar manner to a normal filer window. The data is held in a special file in each directory and you can just double click on this from a 'normal' window to see the descriptions, or you can traverse directory structures using the Tiger windows, in which case the full descriptions are always shown.

Because of the way Tiger works, it is more 'robust' than some similar programs I have seen. It also allows you to use it only where it is advantageous. You are unlikely to need long descriptions of applications and utility programs, but it is very useful for directories containing correspondence and similar items. It works equally well with floppy or hard discs, and you can use it as a 'disc index' for a floppy, as the data file is kept on the actual disc.

I won't bother to list all the features of Tiger, but there is one that I will mention. You can save the descriptions as a text file which can then be used as a record. This can be just a single directory or it can operate recursively, so you *could* have a complete printed record of a structure on your hard disc, if you needed it.

If you think you have seen Tiger before, you are probably right. An early version was published in Risc User a long while ago, but it has been very

much improved and is now Shareware, with a registration fee of £15. Although it is not crippled (or I wouldn't have allowed it as an entry), the 'save text' function is not included on the unregistered version. However, almost everything else does work, so you can try it properly before you register.

Oh, yes, I guess you'll be wondering about the name? Well, Tiger = BIG CATalogue!

Other prizes

There are three other prizes, each of £20. The lesser amount does not necessarily indicate that the program is inferior. I gave considerable weighting to the *usefulness* of a program when judging, and was careful not to put too much emphasis on technical merit. I think you will agree that the first two winners are almost universally useful, but the following three will not interest everybody.

Seek

This is a utility from Mike Williams for looking up Bible references. It contains the complete text of the King James Bible, and although this is compressed, it does make it rather large.

Seek can be used to search for individual words or groups of words and it will display each verse in which the word(s) appear. You can then save the references as a text file.

The complete application takes over 2Mb of disc space. Don't think that this makes it impossible to use if you don't have a hard disc. When archived using ArcFS, it fits comfortably on a 1.6Mb floppy, and it will run perfectly from the archive. It can be used directly from a floppy disc in this form, although the search will obviously be much slower; an obvious alternative is to run it from RAM disc. I mention all of this because you should be able to use Seek from either floppy, hard disc or RAM disc on almost any machine *except* a 1Mb computer with an 800Kb drive. Even then it won't be impossible; you will just have to search in two stages.

Seek won't be of interest to everyone, but because of its ability to search for combinations of words, it's much more convenient than using Zap or Edit on text files. Even if you are not interested in the Bible, it is adaptable for other purposes. There is a full technical description of the way it operates, and so it

should be possible to create your own data files from almost any text.

Ashkeva Alyedin

This is a text adventure from Andrew Fintham. You may recall that this was included some time ago on a selection of text adventures that I offered. I shall therefore not dwell upon it at length, but if you like text adventures, this is a good example. It can be run either in a desktop window or outside the desktop, so you don't have any distractions.

Verb Master

This is a new program from Nigel Caplan who wrote Lingo Master which won a prize in the last competition. Unlike Lingo Master, this is a full Wimp program. It displays the selected verb in a desktop window with its conjugation, and you can easily select which tense you want to display. There is a menu from which you can choose the verb you wish to examine. There are, of course, many other features. *(Coincidentally, we have a review of this product in this month's magazine on page 73. Ed.)*

The program is Shareware and is supplied with a fairly small vocabulary for the French language. However, it has been designed in a 'modular' form so that other languages can be added, and these are available. You can, of course, add your own words. This program will probably be of use to both students and anyone who needs to write letters in a foreign language. It is often in the conjugation of a verb that a writer is most likely to make a mistake, and that is the very thing that it is most difficult to check quickly in a dictionary or textbook.

Special offer

It will not have escaped the notice of the observant reader that, as with the last competition, most of the winners are Shareware. This is not by chance, although I was careful to ensure that the nature of the program didn't influence me. If anything, I was biased towards programs which did *not* have a registration fee because I felt that the author, if not the program, was probably more deserving of the money. However, there is no doubt that the professional approach required by Shareware, and the need to include proper documentation, did have a significant effect.

This month's special offer is therefore a set of discs containing all of these programs. There's around 4Mb of material here, so the price will be a bit more than usual, but it's still very good value at only £3. (stamps or cheque welcome). As with the previous competition, the proceeds will go towards prizes for the next. For this reason, I am not prepared to offer any of these programs individually, but they are, of course, all available from APDL and most other libraries.

In view of the special nature of ClicBack, I have arranged to supply a fully registered version, complete with laser-printed manual, as part of this offer. The total price (including all the other programs) will then be £13. There's no price reduction because the extra money goes to CLIC. This will save you the 'trouble' of registering, and I hope that it will encourage you to use ClicBack. I'm sure you will not be disappointed.

As usual I can be contacted at the APDL address. ♦

Puzzle Corner

Colin Singleton

Paul's new Bold Style highlighted the fact that the sections of last month's column were numbered 13, 14, 11, 12, 9, 10 – in that order! I have decided to turn the column round, and present the puzzles in numerical order – astute readers will now realise that the new puzzles will be at the end! I have also retrospectively numbered the recent non-prize puzzles.

(9) Egyptian Fractions

Dr W O Riha has disproved my conjecture that 1602 is the smallest possible value of the largest denominator in the expansion of $50/89$. He found several solutions with six or more terms, including:

$$50/89 = 1/2 + 1/24 + 1/89 + 1/178 + 1/534 + 1/712$$

He and I have each developed (very different) techniques for generating Egyptian expansions without trial and error.

(11) Prime Square

There are eight variations, by rotation and reflection, of the unique fundamental solution, not two, as I inadvertently stated last month. Readers who claimed more than one fundamental solution had failed to ensure that the twenty numbers are all different. The prize goes to Cornelia Röscher, of Essen, Germany.

(12) Anagram Dictionary

Prompted by readers' entries, and my own further research, I have had to re-think the answer to this

puzzle. Modern dictionaries acknowledge an increasing number of foreign words as having been accepted into English usage. The first six entries in the Anagram Dictionary appear to be **AA AAA- AAALMRSTT** (taramasalata) **AAAAABBCDRR** (abracadabra) **AAAAABCCRS** (asarabacca – a medicinal plant) and **AAAAACEHIMSTT** (acatamathesia – inability to comprehend data presented to the senses). The last six are **TTU** (tut) **TTUU** (tutu – a ballet skirt) **TUZZ** (a tuft of hair) **UWYZZ** (wuzzy) **UY** (yu – precious jade) and **UZZ** (zuz – an ancient Palestinian coin). All these except wuzzy are in Chambers. The OED lists wuzzy, and also the dubious tuz and tuzzy, which I have omitted. The prize for the best answer goes, not for the first time, to John Greening of Edinburgh.

(13) Multiple Shifts

$102564 \times 4 = 410256$. There can be no solutions for multiples >9 , because the two numbers would have different numbers of digits. The possible solutions are formed by the digits of one cycle of the recurring decimal representation of $N/(10^M-1)$ where M is the required multiple and N is any digit from M to 9. When 10^M-1 is prime, the first of these, $M/(10^M-1)$ gives the smallest solution. For $M=2$ this is given by $2/19 = 0.105263157894736842$. However, if 10^M-1 is not prime, one of the other values of N may give a smaller solution. In fact, this only happens when $M=5$, in which case, $N=7$ gives a smaller solution than $N=5$. The solutions are:

$$M=2 \quad 105263157894736842$$

Puzzle Corner

M=3 1034482758620689655172413793

M=4 102564

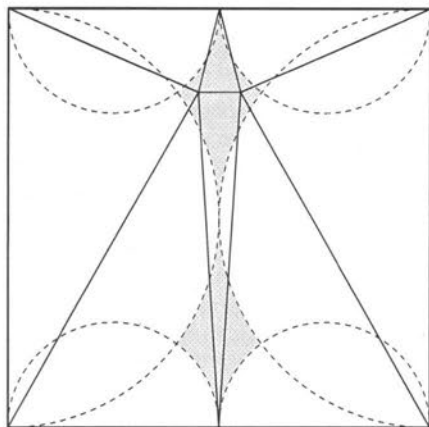
M=5 142857

M=6 101694915254237288135593220338983-
0508474576271186440677966

M=7 1014492753623188405797

M=8 1012658227848

M=9 10112359550561797752808988764044943-
820224719



If we allow leading zeros on the numbers, solutions can be found for multiples greater than nine, but the numbers above are not then the smallest solutions for those multiples.

(14) Very Acute

To the best of my knowledge, a square can be dissected into a minimum of eight acute-angled triangles, as shown in the diagram. The two internal points must lie in one of the shaded areas, outside the semi-circles. I look forward to seeing readers' entries to this puzzle.

(15) Pangram Sentence

A number of 26-letter contributions have been received. The least contrived, in my view, is **Mr Jock, TV quiz PhD, bags few lynx** (Guinness Book of Records 1991). The shortest without proper names or abbreviations is **Jackdaws love my big sphinx of quartz**, (31 letters) submitted by A G Rimmer of Twickenham.

(16) Roots

The tenth root of ten is the 30th root of 1000. The cube root of two is the 30th root of 1024, and is therefore larger.

(17) Knockout

The number of possible pairings of 32 players is $\frac{1}{2} \times 32 \times 31 = 496$, of which Smith v Jones is one. The number of matches played in the tournament is 31. The chance of Smith playing Jones is the ratio of these, i.e. 1 in 16. (Originally published in the Indian Mathematical Society Journal)

(18) No Progress

This month's first Prize Puzzle is inspired by one in Computer Weekly. The set of eight positive integers 1 2 4 5 10 11 13 14 contains no subset of three numbers which are in arithmetic progression. 14 is the smallest possible value for the largest member of such an eight-member set. Can you find corresponding sets with 12 and 16 members?

The other prize will be awarded to the best trio of answers to the following three quickies (19–21).

(19) Waterfall?

An Eskimo sits in his kayak on a calm lake. He takes a brick out of the boat and drops it in the water. Does the water level rise, or fall, or neither? Explain.

(20) Till Death Us Do Part

Smith and Jones contest a duel, shooting at each other alternately (not simultaneously) until one is hit. Smith, who shoots first, has a one-in-three chance of hitting his opponent with one shot, Jones has a 50–50 chance. Who has the better chance of winning the duel?

(21) Loony Post

According to a leaked document, the Unofficial Loony Party proposes to change the prices of first and second class stamps. Even with an unlimited supply of each, there will be 38 different values which you cannot make exactly. What are the proposed postage rates?

Comments and solutions

Please send comments, contributions and solutions to me at 41 St Quentin Drive, Sheffield, S17 4PN. Solutions by **Friday 9th June**, please. ♦

Gerald's Column

Gerald Fitton

It has been hard for me to resist commenting on the !CCShared contribution in last month's Archive but, apart from an "I told you so!", I shall resist the temptation and concentrate on other matters.

This month, my major topic is recursive custom functions. Before you turn to someone else's column, let me say that I think you'll understand what I've written and, in order to motivate you to read what I have to say, I shall use as my example something which seems to be highly popular, a discussion of mathematical calculations relevant to the National Lottery.

First of all though, here are three other small items.

Fireworkz Pro

By the time you read this, version 1.21 of Fireworkz Pro will be available (I don't have a copy yet - it's in the post - but I have been assured that the dateline of the new version is 27th April 1995). If you want an upgrade, you must send both program and examples discs to Colton Software, in a suitable padded envelope. It will help them if you enclose a self-addressed sticky label. If you live in the UK, return postage will be appreciated and help speed up their service to you.

When I get my copy, I'll let you know what differences there are between v1.21 and v1.20.

Viruses

I have received many interesting letters from people who have contracted a virus. Almost without exception, they say that they thought it wouldn't happen to them - until it did. They echo my comment that it is a traumatic experience and hope that it will never happen to them again. Nearly all of these letters end with the request that I should warn Archive readers to be careful, so that they don't experience the same trauma. Personally, I wish that some of these virus writers would stop thinking how clever they are and think about the headache they are causing. They are abusing the talent they've been given.

PipeDream on the Risc PC

David Lenthall, amongst others, has written to me about the failure of PipeDream to display row numbers correctly on the Risc PC. Perhaps, if you have written to Colton Software about this problem, you would let me know their reaction - after all, as many of you have pointed out to me, Colton Software are still selling PipeDream. Is the problem going to be fixed by Acorn in a future release of RISC OS or is it up to Colton Software to fix it?

I have been struggling to find a 'work around'. The best I can come up with is to insert an additional column before the first column, so that it becomes a new column A. The formula 'row' will return the row number (eg 1234 in slot A1234). Enter 'row' in A1 and replicate it to the bottom of the document. This process can be executed as a command file. I include one on the Archive monthly disc.

The Lottery

This month many of the letters I have received ask me if I can provide a spreadsheet application which will improve the user's chances of winning the lottery! Well, as a statistician, I have to believe that the numbers which are selected by the lottery machine are random numbers. One of the properties of random numbers is that all methods of prediction fail. To put it as simply as I can; I can't help you to win the lottery!

However, what I can do is to help you to understand how to calculate your chances of winning, and I'll comment on whether it is a worthwhile gamble! On the way, I shall introduce you to the joys of using recursive custom functions!

Some overseas subscribers to Archive may not know the details of our new National Lottery, so I'll give a brief description of how it works. To participate, you select six numbers from the numbers 1 to 49 (i.e. there are forty nine different numbers to choose from). You can use each number only once in your selection of six. Unlike the typical office sweepstake, many people may choose the same set of six numbers as you.

You pay £1 for each set of six numbers you choose. Each Saturday evening at about 8 o'clock, six numbers are selected at random from the forty nine using a glorified bingo machine full of numbered ping pong balls. A seventh ball is selected and this is called the bonus ball (more of which later). If your set of six balls is the same as those selected by the machine, you've won the Jackpot. If more than one person wins the Jackpot then it is shared out amongst the winners. There are also consolation prizes; for example, if your set of six includes three of the six winning numbers, you win a fixed prize of £10.

The binomial coefficients

The number of possible sets of six numbers drawn from forty nine different numbers requires the evaluation of a well known mathematical function which generates what are called the binomial coefficients. Because the modern notation for this function is a little difficult (but not impossible) to include many times in a word-processed document, I shall call it by its old fashioned name, the nCr function. This function has two parameters which are n , the number of numbers from which you can make your selection (in this case 49) and r , the number of numbers chosen (in this case 6). What we need to evaluate in this case is $nCr(n,r)$ where $n = 49$ and $r = 6$.

The value of $nCr(49,6)$ is given by: $(49*48*47*46*45*44)/(6*5*4*3*2*1)$. You will notice that there are r (i.e. 6) numbers on the top and r numbers on the bottom of the fraction. The numbers on the top start at n (i.e. 49) and work downwards; those on the bottom start at r (i.e. 6) and work downwards.

Recurrence relationships

If you look at the expression for $nCr(49,6)$, you will see that $nCr(49,6) = (49/6)*nCr(48,5)$. In other words, we can express the value of $nCr(49,6)$ in terms of $nCr(48,5)$. In the same way we could express $nCr(48,5)$ as $(48/5)*nCr(47,4)$ and so on – but not forever! In mathematics (long before computers), this type of general statement is an example of a recurrence relationship. It is:

$$nCr(n,r) = (n/r)*nCr(n-1,r-1) \text{ for values of } r > 1.$$

When $r = 1$, we have a problem, because $1 - 1 = 0$ and dividing by 0 is one of those things that

mathematicians (and computers) find difficult! When $r = 1$ the value of $nCr(n,1) = n$. This leads us to a mathematical statement which we can write in PipeDream or Fireworkz format as:

$$\text{if}(r > 1, nCr(n,r) = (n/r)*nCr(n-1,r-1), n)$$

Using recursion

There is a lot of snobbery about recursion. It is often portrayed as a programming feature which can be used only by an expert. Don't believe it!

There are many useful mathematical functions (such as the nCr function above) which are capable of simple expression as a recurrence relationship but which, in explicit form, look overwhelmingly difficult to understand! In these cases, using recursion makes the program easier to write and easier to understand. When a program is easy to understand, changing it (improving or expanding) is much easier. In those cases, I recommend using recursion. Where the reasoning behind the use of recursion is obscure, I would suggest that the writer is just showing off!

There is a drawback to using recursion – it often takes longer to evaluate than the explicit (but more complicated) version.

The recursive function

In the next paragraph, you will find the core of a PipeDream or Fireworkz custom function which will calculate these binomial coefficients. Usually, I add much more comment to my custom functions to make them more readable. The version on the Archive monthly disc includes the extra comment, as well as lines which demonstrate the working of the custom function in detail.

```
...function("binomial", "n:number", "r:number")
Declare the 'name' of the one local variable,
"answer", and the slot it uses
...set_name("answer", B5) 15 180
Initialise the local variable
...set_value(answer, 0)
The next line contains the recursive call to
the "binomial" function
...set_value(answer,
if(@r>1, @n/@r*binomial(@n-1, @r-1), @n))
Return the result
...result(answer)
```


The custom function is called "binomial". The recursive call is made in the line which starts "...set_value(answer,if...)". This line includes a call to the function "binomial" – that is to say the function 'binomial' calls itself! It is this feature of a function calling itself which makes it recursive.

There is a difference in the arguments of the original function and the arguments used in the recursive call. The original function calculates $nCr(n,r)$ whereas the recursive call calculates $nCr(n-1,r-1)$. In fact, after stripping out all the non-essential parts of the custom function nCr , what you are left with is the recurrence relationship:

$$nCr(n,r) = (n/r) * nCr(n-1,r-1).$$

What happens when the recursive function is executed is that the early part of the function (down to the point of recursion) is executed repeatedly, for reducing values of n and r . During this part of the recursive procedure, the latter part of the recursive function is never executed.

Naturally, we can't keep going inwards for ever. When you set up a recursive procedure then, like everything in life, it's important to know when to stop! In the case of nCr we have to stop the recursive procedure when the value of $r = 1$ because the next incarnation would lead us to try to divide by zero. We achieve this halt to the recursion by using an if(,,) function. The innermost incarnation of "binomial" does not call itself, because the if($r > 1$,,) ceases to be true.

What happens after the innermost incarnation of binomial has been executed? If I haven't lost you yet, you'll probably realise that it is the innermost incarnation of "binomial" which reaches the '...result(answer)' line before any of the 'outer' incarnations. This value is returned to the next incarnation (going outwards) which then completes its execution down to '...result(answer)'.

Having 'entered' the recursive procedure r times, we must 'unwind' it by running the 'exit' part of the custom function r times. One at a time, the values of '...result(answer)' are returned, until every incarnation has been executed. Finally, the last value is returned to the main spreadsheet.

Back to the Lottery

The value of $nCr(49,6)$ is 13 986 816. This means that there are just under 14 million different lines of six numbers available to you (and others) when you choose your six numbers from forty nine. Your chance of winning with just one line is about 14 million to 1 against!

The £10 prize

The number of ways of selecting three numbers from the winning six and a further three numbers from the losing forty three is $nCr(6,3) * nCr(43,3)$, which is 246 820.

DeRef(slotref)

Let me use this calculation to explain something that has puzzled many people using the same custom function twice within the same slot. What I have to say applies to all custom functions and not only recursive functions.

If you use the custom function as I've written it, you will find that, instead of returning the value you want, the custom function will return a much larger number. This larger number is $nCr(43,3) * nCr(43,3)$. Somehow or other, the spreadsheet has lost the value of $nCr(6,3)$ and substituted $nCr(43,3)$. I would classify this as a bug but it is an obscure one with an obscure work around. The work around is to change the last line of the custom function from '...result(answer)' to '...result(deref(answer))'. You will find some (very limited) information about the deref() function in the PipeDream and Fireworkz handbooks, but they won't tell you that you should use deref() as a matter of course when using custom functions that might be repeated within the same slot.

I have included, on the Archive monthly disc, a much simpler example (a custom function which adds together a couple of numbers) which gives the incorrect answer when used twice within the same slot unless the deref() construct is used.

Four of the six winning numbers

This is evaluated as $nCr(6,4) * nCr(43,2)$. There are 13 545 of the (approximately) 14 million lines which include four of the six winning numbers.

Five of the six winning numbers

The formula this time is $nCr(6,5) \times nCr(42,1)$ and gives the answer 258.

Five plus bonus

There is one more combination which results in a prize, usually quite a good one. To win this prize you must have five of the six winning numbers and your sixth ball must be the seventh ball drawn by the lottery machine; the last ball called the bonus ball. There are $nCr(6,5) = 6$ lines (out of the 14 million) which can win this prize.

Gerald's second rule of gambling

Now let me discuss whether it is worthwhile betting on the lottery.

For the purposes of teaching subjects such as Management Decision Making (where the outcome of such management decisions is uncertain), I have invented a few rules of gambling. My second rule is "Don't gamble what you can't afford to lose".

This rule is not intended to be a rule which relates to individual morality – though there are moral overtones and, as a tutor and counsellor of young students, I do come into contact with all too many who are addicted to gambling. No! My second rule is one which should be applied when the outcome of a decision is uncertain. I usually start my lesson with a short discussion of gambling in general but quite quickly get around to a discussion of buying insurance. You may think that buying insurance has many things in common with betting on a horse in a race! I take great pleasure in pointing out that if you don't buy insurance then you are also taking a gamble; you are gambling your house against the possibility that it won't burn down!

I go on to introduce the concept of a 'fair bet'. A fair bet is one where the amount you can win, multiplied by the probability of winning, equals the stake. As an example, if you were to bet me 1 unit that a single throw of a dice will result in a six then, for a fair bet, I should offer you odds which will return 6 units to you if you win.

I continue my lecture by suggesting that there are situations where the application of my second rule implies that it would be wrong to bet with a 'bookie'

who offers you a fair bet rather than one loaded in his favour!

If you don't insure your house, you are taking a gamble that most of you can't afford to lose! I point out that the application of my second rule to such an insurance situation requires that, as the person insured, you should place your 'bet' with an insurance company which doesn't offer you a fair bet – you should bet with one where the odds are loaded in the insurance company's favour (but not too much)! Why? I hesitate to use the word "win" in this context, so I'll say that it's because you want the company to be there and to pay out when your number comes up!

Applied to management decisions, the rule requires you to pass up on some bets where the odds are in your favour because you can't afford to lose. I think that Nick Leeson's recently publicised bet on the Singapore derivatives market was of that type. The odds were in his favour (he'd proved that in the past), but it was a bet he (or rather his employers) couldn't afford to lose.

A corollary of my second rule is that there are some occasions when you may bet a small amount (which you can afford to lose), even though you are not offered a fair bet, because the consequence of winning is to change your life completely. The Lottery is not a fair bet because the money returned in prizes is much less than the total stake money. Nevertheless, you could convince yourself that it is OK to make the bet (but only if you can afford to lose the £1 stake), because the consequences of success would be to change your life.

To summarise, my second law of gambling will allow you to make an unfair bet, but you should work out how unfair you think it is.

Marginal returns

In my decision-making course, I also discuss the concept of the marginal return, as applied to big gambles. The following is my hypothetical scenario. I am a multimillionaire. I suggest to you that you bet me one penny against my million pounds on the toss of an unbiased coin. You take the bet, because it is an unfair bet loaded in your favour. You win. Your life will be different from here on! Now I suggest that we bet again, but this time I bet ten million

pounds and you must put up the whole of your one million (you can't put up only some of it). It is still an unfair bet loaded in your favour but I ask you, would you take the bet?

I have a rule about this situation too, but it is rather complicated, so I won't quote it. What I would ask you is "Would you prefer the lottery to have more Jackpot winners of, say £1M, instead of the multi million winners which the lottery currently creates?"

Finally

Although there is no way in which I (or anyone else) can predict the numbers which will be generated by a random number generator, there is something which might be useful to lottery punters; that is an application which looks at the number of people who win with different number combinations. There is no doubt that some numbers are more popular than others and that, when these popular numbers

come up, the prizes are smaller than average. The converse of this is that if you bet regularly on unpopular numbers then, when your numbers come up, even for one of the minor prizes, you will receive more than that you expect if you based your calculations on the odds for a fair bet.

If anyone has a database which includes both the list of winning numbers and the number of people who have won the different minor prizes, I have a lot of correspondents who would like a copy!

In conclusion

Although letters addressed to me via the Archive office will get here eventually, it is usually much quicker to send them to me direct. My address is that of Abacus Training. I prefer disc copies of correspondence with a short hand-written note outlining what is on the disc, a self-addressed sticky label and, if possible, return postage. ♦

The Engineer Speaks

Ray Maidstone

I thought this month it might be a good idea to give some tips on DIY maintenance.

The computer

For the computer itself, there are a couple of things you can do. Once a year, clean fan filters and fan blades using a 1cm (½") paintbrush and a vacuum cleaner. I mentioned in Archive 5.1 (in detail with diagrams!) that it is better to fit the filter material *outside* the fan blades, so that if the filter becomes blocked, there is still some airflow within the machine.

Change batteries once a year in 310s, 410s and 440 series. You can check the NiCads in 3000s, 540s and later machines – look carefully at the pcb for signs of crystallization. If you find any, the batteries need to be replaced by an Acorn Service Centre.

The keyboard

Try not to get any crumbs or cat fur inside, and no keyboard likes coffee! There are full instructions for cleaning old style keyboards in Archive 5.1, but

newer ones are constructed using two foil membranes and are a non-serviceable item. Do not be tempted *at any time* to use switch-cleaner, as this is entirely unsuitable for Acorn keyboards.

Monitors

There isn't really anything you can do to service monitors, except maybe clean the screen with anti-static wipes occasionally.

Mice

Mice can be given a wash and brush-up. Remove the ball and clean it with detergent and water, then make sure it's dry before replacing. Clean the rollers gently, without scratching, using a scalpel or a miniature screwdriver blade. Tip any bits of grime out, and make sure you don't have crumbs or dust on your mouse mat!

Printers

Dot matrix printers need to be serviced once a year, using the 1cm paintbrush and vacuum cleaner again. After removing all dust and odd bits of paper, you can lubricate the bar the print head travels along, by

placing a tiny drop of very light grade sewing machine oil next to the print head and allowing it to spread the oil itself.

Bubble jets and ink jets are not really serviceable, as special equipment is needed.

Try to use laser printers in as clean an environment as possible. There is usually a felt rubbing bar for cleaning the diffuser, which you can remove and clean as directed in your printer manual. These felt bars are usually part of the equipment you get when you replace the toner cartridge.

CDs & floppy drives

CD drives are another non-serviceable item, as CD drive cleaners do not really have any effect.

Floppy drive cleaners can help if there is light soiling; otherwise they are not much use.

Hard drives

These are not serviceable either, but you can extend their life by keeping them cool and spinning them down as much as possible. It is a good idea every couple of years to back up your drive, reformat it and then re-install the information. This is because they tend to get a lot of wear around the boot file and root directory area, and reformatting helps distribute this more evenly.

For safety reasons, never take risks when handling electronic equipment – if in doubt, always consult someone in the know! ♦

Hints and Tips

Canon BJ200 + CC TurboDriver –

I have had a number of problems with this combination, and thought my solutions may help others.

The first problem concerned the output of IBM ProPrinter strings. These occur because the BJ-200 printer definition file supplied is an IBM definition file, and should therefore be labelled as BJ10 since IBM strings cannot be used in BJ200 mode. The converse also applies, i.e. BJ-10 mode cannot handle Epson strings. I then used an Epson printer definition file from the Acorn supplied discs, and all the problems disappeared.

The second problem concerned printing from Basic. I have written a WIMP application which writes out a series of results for the bridge club of which I am a member. I need to write direct from Basic so that I can alter the print style and line and row spacing to produce the best layout, using the comprehensive spacing and styles provided in BJ200 mode. It makes no sense to write these strings to the screen so I use *FX3,10 to start the printed output and *FX3,0 to stop it. Everything prints perfectly, but a drawfile will not print afterwards. I eventually discovered that the *FX3,10 caused a Turboqueue file to be created, but the *FX3,0 command leaves the file open and thus hangs the printing process. I finally received a letter from CC today and I quote:-

“Regarding the Basic printing ‘problem’. The operating system itself will not close the printout file after a *FX3,0. Indeed, we have reported this as a bug to Acorn. However, if you immediately follow the *FX3,0 command with a VDU3, then the file will close correctly.”

I have tried it and it works!

John Wallace, Crawley

CD-ROMs – With the advent of magazine CD-ROMs, which usually come in a soft plastic sleeve, the safe storage of these can be made using a 5¼" disc box.

Ted Lacey, Southampton

Cursor movements in Publisher –

There have been moans about one aspect of Impression Publisher in various Acorn magazines: <shift-cursor> no longer moves the cursor by one word, but is used for selecting text.

In the latest version (1.05) of Publisher, the Preferences dialogue box contains the option “Shift Cursor Word Move”, so you can take your pick.

Jochen Konietzko, Köln, Germany

Debugging via the serial port – Why has no-one extolled the virtues of a second machine connected via the serial port? Even on the old BBC B, this can be very useful. A trivial Basic program on the second machine will print out the incoming data stream. Debugging time can then be cut by such simple things as

```
os_cli(echo Start of initialise() {serial: });
```

in a C file. Clearly this is rather basic; a variadic function like `printf()` is much more flexible, but the general usefulness, especially when working on desktop applications, is considerable. Besides, there must be lots of old machines around gathering dust. I use an old mono Kaga monitor I've had since soon after the BBC first came out, and an old 310 with no disc drive.

John West, Surrey

Deskjet 540 problems – I recently bought an HP DeskJet 540, the replacement for the DJ520 and then spent a frustrating weekend trying to get it to work with my A5000. I got beautiful printouts but it took half an hour to print an A4 page. I tried the latest Acorn DeskJet driver sent to me by Gerald Fitton, but it was no better than previous versions.

As soon as Monday came, I phoned Acorn and they had just heard from their Australian office that other people had similar problems. Since the DeskJet 540 is software controlled and the Centronics protocol has been slightly modified, the 540 and A5000 were incompatible.

The earlier Deskjet 520 was perfectly suitable to work with the A5000 but it was now officially off the market. Fortunately, the shop where I purchased the 540 gave me a full refund when I explained the dilemma, and I knew that I had seen a 520 recently in another store. I was lucky and purchased the last one in stock – its monochrome resolution 600 by 300 is the same as the 540 but it does not have the colour upgradability of the 540.

Acorn say that the 540 should work satisfactorily with the Risc PC but not with earlier computers, due to hardware differences in the controller.

(I gather that, after further investigation, it seems that the problem is only with certain A5000s, not with all of them. Ed.)

Michael Nurse, Cambridge

Gang Screen in RISC OS 3.5 – With reference to Hints & Tips (Archive 8.7), the list of names can be initiated by four clicks of the menu button over any part of © Acorn Computers Ltd, 1994, although it sometimes refuses to work again until after a reboot.

M R Buckland, Daventry

Impression printing – Now, I know you all know this, but... for months, I have been cursing the fact that, with Acorn's new printer drivers and LaserDirect, printing one file too soon after another causes a "not enough memory to print" error and you have to wait and try again. Well, I discovered today that if you grab several files together and drop them on the printer driver icon, they print off, one after the other, without so much as a hesitation. I wish someone had told me before!!!!!!

Ed.

More uses for the serial port – One of the pieces of software built into the A-Link is the terminal software which could be used to receive the debugging data, described by John West above, on a Pocket Book.

I find this combination useful for another task as well. There are at least two PD applications which allow you to set up a task window (as you get from `ctrl-f12`) which takes input from, and outputs to, the serial port, which means I can run command line utilities without taking up desktop space, and even if someone else is using the computer for other tasks.

Matthew Hunter, NCS

Printing from text editors – Contrary to Matthew's comments (Archive 8.8 pp28/29), in my experience, Edit does print in response to `<print>` but Zap does not. Dragging the file-save icon to the printer icon does work with both

Hints & Tips

packages. I will stick well clear of <shift-print>, however. Zap prints a black (NOT blank) page!

There remains one problem, however, which is common to Edit and Zap. If the document contains a line of text which is too long to fit on one line, it is truncated! This did not happen before I upgraded to RISC OS 3 Laser Direct and Printers 1.22.

Previously, Edit inserted a CR/LF to print the rest of the line (I did not have Zap then).

Colin Singleton, Sheffield

Risc PC Apps directory – As Keith Hodge has pointed out in his excellent Risc PC column, the correct place to add applications into 'Apps' on the iconbar is in

!Boot.Choices.Boot.PreDesktop, by adding lines such as:

```
AddApp adfs::HardDisc4$.Utilities.!ArcFS
```

You may have noticed that the first line of this section reads:

```
AddApp Boot:!.Apps.*
```

which displays any application, i.e. a directory whose filename begins with a '!'. This means that any normal directory whose filename does not begin with a '!' will not be displayed inside Apps on the iconbar. So, if there are any applications there which you never use, you could place them in a directory (called 'Not Needed' say) and they will not be displayed, although they are still accessible through Apps on the hard disc.

The converse of this is that lines such as that given above for adding applications into Apps need not, in fact, be placed in the file PreDesktop – they can be anywhere. Therefore, you can have a small Obey file which adds a selection of your favourite applications at any time. This saves cluttering up the Apps directory display with everything you might conceivably need until you actually need it, and it saves on memory and time taken to Boot the machine, as the !boot files of your chosen applications are not run, and their sprites are not loaded, until you choose to add them to Apps by using your Obey file.

Matthew Hunter, NCS

Risc PC audio expansion – The audio header required by the audio mixer for the Cumana Indigo CD-ROM drive, and the identical Acorn and ESP 16-bit sound upgrades, is link 14 which was not fitted on some early machines. The link is located at the top right corner of the motherboard if you are looking at the machine from the front. It is a row of five pins, with links connecting 1-2 and 2-4. Pin one is closest to the back of the machine. If this link is not fitted, get in contact with Granada who will replace your motherboard for one fitted with the correct connector. Currently, the Cumana and 16-bit upgrades are mutually exclusive, but ESP are working on an audio mixer to enable the 16-bit sound and CD sound from any CD-ROM drive to be combined.

Matthew Hunter NCS

Risc PC font size – There was a request in Archive 8.8 p38 regarding the font size for the outline font used in place of the system font. Full details are given on pages 220 and 221 of Volume 5 of the RISC OS 3 PRM's, but the following example Obey file will demonstrate the method. It should be placed in the PreDesktop directory of the !Boot sequence.

```
configure wimpfont 0
set wimp$font Trinity.Medium.Italic
set wimp$fontsize 192
set wimp$fontwidth 160
```

The last two lines allow you to alter the height and width of the font, as desired.

It will only have an effect on text which an application regards as system text – an application which uses its own fonts in icons will not be affected.

David Springle, Cheshire

Window behaviour – I found that, when two windows containing a word processor are open, it is possible to scroll one window and *simultaneously* type into the other window. Further investigation has shown that it is possible to do this with Zap (v. 1.20), Edit (v. 1.50), Desk Edit (v. 3.00) and Publisher (v. 4.01). These are the only 'word processors' (for want of a better collective name)

I have access to. It is also possible to mix the WPs in the windows, e.g. the scrolling window could contain a Publisher document and the typing window could contain a Zap page. This only breaks down with Edit as the scrolling window. When the Edit window is scrolled, this becomes the active window and typing is not possible in the other window. (Why? Can it be changed?).

Dave Livsey, Devon

Window behaviour II – Usually, if you have clicked on a window titlebar (using select), to move it, or bring it to the front of the window stack,

processing will continue in the background – this can be seen by having !Alarm counting seconds on the iconbar. If the window you are using has a pane attached, however, you will find that the processing stops. This is because clicking on the titlebar brings the window to the front of the window stack, and the application then brings the pane to the front. The window holding the pane is then no longer at the front, and the WIMP tries to bring it to the front again, and so on. Using <adjust> does not have the same effect, since it does not try to alter the order of the windows.

Matthew Hunter, NCS

Risc PC Column

Keith Hodge

Software information

You may remember that I commented in the April column, that my existing version of Euclid did not work on the Risc PC. The good news is that Oak Solutions will upgrade yours for you, free of charge, to version 2.19 (09-Apr-92), provided that you send the usual stamped and addressed return label. The software now works well, with no problems encountered.

Euclid was a program ahead of its time when it was released back in 198x, and it still is a very versatile 3D composition tool, with the ability to animate the resultant images, which greatly aids the visualisation of objects. I even used it to produce the animated title sequence for the Welsh Language S4C television programme "Triongle", as the £12,000 graphics system that was in use in the studio at that time could not do this!

Software compatibility

There is a very pleasant reduction to zero this month in the number of programs reported not to be working on the Risc PC. Software writers are obviously getting to grips with the new machine and its operating system.

Hardware and software news

Some time ago, I mentioned that I had found a problem with the serial port, where data ceased to

flow when <select> was held down on the title bar of a window – as if you were about to move the window. A subscriber (whose name I have lost – please drop me a line) rang to advise that the problem is only present on windows which have a tool pane, and is caused by the OS getting in a loop. The problem does not occur when <adjust> is used, as the Window Manager does not try to change the depth of the window on screen, and so the loop is not entered.

The effect can readily be seen by having the clock running on the icon bar with the seconds hand (or seconds digits) displayed. The clock stops when <select> is held down on the title bar. This, of course, means that all multitasking has ceased and explains why the serial port locks. Does this also explain the dropped characters I have experienced sometimes? *This is one for Acorn's OS update list.*

A further point of interest here is that Style stops the clock when <select> is used on its title bar(!) and yet there is no obvious tool pane as per Multistore. The fact is, of course, that the button bar of Style must, in effect, be a permanently attached tool pane.

(If you want to see this effect, try it with Draw with the tools shown or not shown, using <select> or <adjust>. This, apparently, is a known 'feature' of RISC OS. See "Window Behaviour II" in H & T above. Ed.)

Those of you thinking of getting a CD-ROM drive might like to consider the caddy question. This is an area which requires careful consideration before a purchase is made. Drives which have a caddy can be mounted horizontally or vertically, as the disc is retained in the caddy.

There is, however, a considerable cost penalty (at approximately £4 per extra caddy) with these drives, in that you really need a caddy for each of your frequently-used discs, because it is quite a performance getting the discs into and out of the caddy. Non-caddy drives, however, can only be mounted horizontally, but disc changing is very quick (just like an audio CD player).

(Apparently, several CD drive manufacturers have stopped making caddy-loading drives. However, I gather that they are working on a system whereby the CD is held in place with a clip, so that the drive can be vertically mounted. If anyone has any information, please let us know. Ed.)

A number of subscribers have commented on the high cost of getting a full Multimedia Windows setup operational on the Risc PC. It seems to me that the problem is that of trying to add the PC bits to the Risc PC, whereas we should be looking for Acorn to produce transparent loaders, such as those supplied by Computer Concepts for graphics images in Impression, etc.

For instance, when you click on a Wave file on a PC CD disc, the OS should know about the .WAV extension, immediately load a utility and convert the file to the appropriate Acorn filetype and pass it on via wimp\$scrap to the relevant application. The same should happen with graphics files, films, etc. This would, of course, further increase the outstanding flexibility already provided by the machine.

(I have to laugh at work, watching people trying to get a JPEG file on screen. I took my machine into work one day to demonstrate what a true multitasking/object-orientated filing system allows. There was a very loud silence when I demonstrated how a file, when clicked upon, caused the machine to load an application and display the graphics file, no matter which format it was in. When I demonstrated OLE and <ctrl-C> passing of

graphics images / text files, I was told to take it home! I may add at this point, that the telemetry manager has now stopped taking the mickey out of "non standard" Acorn machines. You should try it yourself some time.)

Comments of the month

(1) A big thank you to Dave Willington, Bob Ames and Derrick Porter for all the very useful information on Family History which they were good enough to send me. Dave Willington commented that there was no sign of the program "Family" on the monthly disc, which I guess was so full that Paul was unable to fit it in. I have submitted it again!

(2) I have read of all sorts of problems with dongles / special leads (poor old CC!), but I must say I have never had a problem with my Turbo Drivers on the Archimedes or on my new Risc PC. I also firmly believe in them, as they are the only way that software can be made safe from piracy. The only thing I feel should be provided is two dongles when you purchase for your company, so that you can use it on your machine at home in the evening.

Request of the month

From Tony: I would like to use the Slideshow application provided with the Risc PC to display my own digitised images. Using ChangeFSI to convert the images to 768x512, as required by Slideshow, would be much easier if you had a screen mode of this size available on the desktop, as you can then simply select "scale to fill xxxx yyyy", where xxxx yyyy is updated by ChangeFSI when you select a screen mode.

The problem? This is not provided by the AKF85 monitor script. Has anybody produced a suitable definition? I seem to remember that Arthur Taylor was very good at monitor scripts – any chance you could produce this, please, Arthur?

Tailpiece

As usual, I can be contacted by letter at the HES address on the back page, by telephone after 7p.m., or by Packet Radio from anywhere in the world, as GW4NEI@GB7OAR.#16.GBR.EU. ♦

Cannon Fodder

Dave Wilcox

This is one of the latest games added to the impressive collection of Krisalis Software. The game was first seen, to the best of my knowledge, on the Amiga format, and has now been adapted for the Archimedes. The conversion is excellent – nothing seems to have been lost in graphic or sound quality – 10 out of 10!

The package

The game comes on three discs in a sparse cardboard box with a 16-page, A5 manual. The manual is probably one of the best I have read to date, being written in a very relaxed manner and covering every aspect of the game. The game is started with the usual double click on the game icon on disc one, and other discs are prompted as required. If you have the space, you can install the game onto your hard disc with no trouble (2Mb of space needed), and no key disc is required to run the game.

The game

Once run, the game goes through a collection of introduction screens, with a good musical backing. This can be bypassed by a mouse click. The first game screen is Boot Hill. You have 360 eager conscripts ready and willing to do battle for you. Of these, you can only have 15 volunteers per mission. The game has 24 missions which are split up into different numbers of phases, the maximum being six.

Each phase begins with the set number of volunteers being admitted into the war zone, the object being to kill the enemy and/or destroy their buildings. To move around, you point the mouse to where you wish your troops to move, and click the left mouse button. They will immediately start to make their way to this point. The right hand mouse button is the fire button – push this and the whole troop fires towards the pointer, anything in the path of fire will obviously die. The enemy troops are programmed intelligently and will move around and fire on your troops, so life is not too easy for you.

As the game progresses, you will find boxes of grenades or bazookas. Your troops will carry these away with them and can then use them to destroy enemy buildings, vehicles or troops. Don't be fooled into thinking that you are given an advantage though, because the enemy also has access to the same weapons, and they are normally a bit quicker in their use.

Once the objective of a mission is achieved, you exit the war zone with a little dance from the victorious troops. The next screen is in commemoration for those lost in battle, with a scrolling list of names. This is followed by the list of victor's names and their subsequent promotions. It is then back to Boot Hill, where a cross is erected for every loss, and the next mission is ready to go. The victors go on, accompanied by new recruits to make up the necessary numbers. Whilst at Boot Hill, you can save your progress to a specially formatted disc or straight to hard disc for easy return at a later date.

This is not just a simple shoot-em-up type game because you can incorporate a fair degree of strategy by breaking your squad into smaller teams with each one designated a different job. As an example, you can set up crossfire, or have covering fire from a point of cover.

There are different terrains for the missions, ranging from Jungle to Arctic scenarios. These are the ones I've come across so far but, apparently, there are also Desert, Moors and Underground areas. As the game progresses, you also come across various types of vehicles, choppers, tanks, jeeps, skidoos, and artillery guns. Some of these are equipped with armaments, while others are just for transport. All are at your disposal if you're good enough.

The verdict

I have no doubt at all that someone somewhere will find the topic of this game offensive, but I think they will be missing one vital point – it is a game – and, in my humble opinion, a good one. This game is now installed on my hard disc and, I have to admit, is played in most spare moments. The graphics are excellent, sound is good, game control is excellent

and some of the scenarios are very testing, and certainly keep your attention and interest. A very good game, worth every penny.

Cannon Fodder costs £24 through Archive or £25.99 through other outlets. ♦

Impressive

Gabriel Swords

Impressive is a neat little utility from the makers of Keystroke – that much vaunted ‘macro maker’ used extensively by our very own editor. Impressive is a read-only version of Keystroke, designed to take the effort out of setting up the macros yourself. It works on Impression Style, Publisher and Publisher Plus.

What is a macro?

A macro is made up of a series of actions, which are ‘recorded’ in a particular order. They are then ‘played back’ automatically, in the given order, to execute a desired process. For example, using menus to set a border in Impression requires a number of actions. First, you must click on <menu>; then you move down to ‘frame’; then across and down to ‘Alter Frame’. Once inside the dialogue box, you click on View; then you choose the border frame you require. Press <return> or <OK> and the frame is set. In Keystroke, you can set up and save a macro which follows and records all those movements. So, in future, if you want to set that particular border, you simply playback your saved macro. In Impressive, all that recording is done for you.

Enter the button bar

When you load Impressive, you get a ‘button bar’ of pre-defined macros, all ready for you to use. Among the preset macros is the ability to change, automatically, the colour of text, borders and backgrounds; you can rotate or change the attributes of graphic frames and their contents; you can change borders; create new frames to preset sizes; you can automatically turn off text repel or set a

frame to transparent. There are, in fact, 80 preset operations included on the button bar, with some spare places so that you can add to the selection.

You can even drag an Application icon to an empty button. Impressive remembers where the application is, and loads it for you when you click the button. In this way, it saves you ferreting around in directories to find the application you’re looking for. You can do the same with sprites and drawfiles. This time you put a copy of the file you want onto an empty button, and when clicked upon, it will load that image into a selected frame.

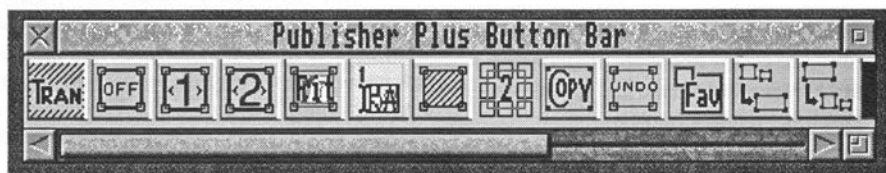
And that’s not all; if the presets are not quite what you want, you can change them. For example, if the preset frame is too small, you can make it bigger. If you don’t like the cyan values of the colours that appear on the bar, you can change them. If you don’t like the button bar sitting horizontally across your screen, you can change it to hang vertically. What you can’t do is set up a completely new macro – you need Keystroke for that.

In operation

When you click on a button, you actually see the sequence of operations on screen, so, for example, you see a frame dialogue window open and boxes ticked or un-ticked, figures entered or erased. It’s exactly what you would have to do, only it does it faster.

Niggles?

There aren’t any serious ones. I would have liked to have seen a bit more information in the manual about changing the settings of the pre-defined files.



To change the setting, you actually have to find your way inside the button bar application. The manual doesn't tell you how to do this – it assumes you already know. Now, most people probably do know, but a mention of 'shift-double-click' might have helped. Once inside, there are useful help files which tell you what to do, so it shouldn't be too difficult once you find your way in.

The other slightly annoying thing is that when you remove an icon from the button bar, the rest don't shunt up and fill the gap, it just stays empty. This is fine if you only remove one or two, but if you remove a lot, it leaves lots of gaps. The only way to avoid this is by completely rearranging the bar from

inside the button bar application window – not difficult, and maybe for only £10 you shouldn't expect anything else!

Conclusion

So, would I use it? I would – I do! I've cut my version down to my 20 most used operations; that way I don't have another icon bar stretching right across the screen. My feeling is, that once you've used the button bar you'll wonder how you got on without it – then you'll want to go all the way and buy Keystroke!

Impressive costs £9.95 inclusive from Quantum software or £10 through Archive. ♦

HolyBible – Part 2

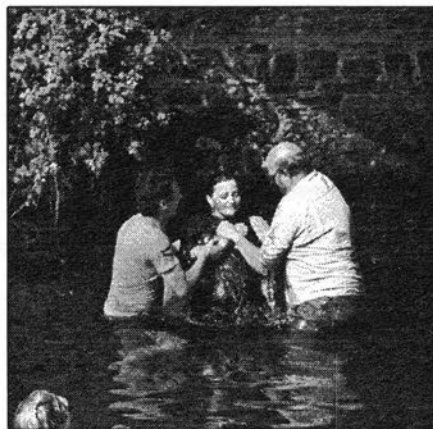
Gabriel Swords

Last month we had a look at some of the things HolyBible can do. This month we'll look at base resources (which I missed last time), some new features, including more powerful search operations, the problems with copyright and, finally, some hints and tips.

Base resources

Base resources are accessible from **Open** on the icon bar menu. When you open resources you get another window on the screen, showing just which resources are available to which verses. At the moment, there are only a limited number of resources and they are really only there for demonstration purposes, but when you see them, you begin to realise just how useful they could be. For licensing reasons, most resources are going to be 'read only' – so you can't export the text to your favourite word processor and use them as the basis for your very own Bible dictionary!

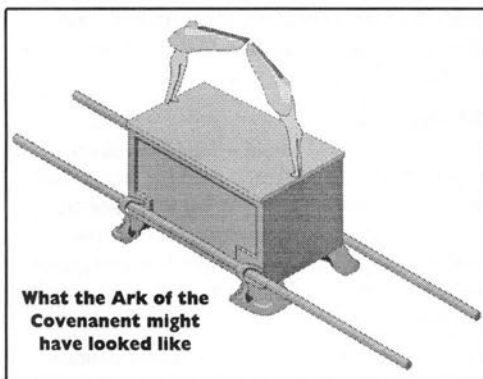
Included with the base pack are study notes from the NRSV on Genesis 1. There is also an index of verses to which various resources are attached. For example, double-clicking on 1 Kings 6:1 brings up a commentary on 1 Kings chapters 6 and 7, the building of the first temple of Solomon. Clicking on Exodus 39:1 brings up some notes on the High Priest's clothes; there are a larger number of notes



on the Ark of the Covenant attached to a number of Old Testament verses.

As well as the written resources, there are a number of pictorial ones. There is, for example, a drawfile showing what the Ark of the Covenant might have looked like, plus some maps of Old and New Testament Palestine (see overleaf). Attached to Romans 6:1 there's a sprite of an open air baptism in Tavistock. Although these files can't be dragged directly to other applications, they can be opened and then re-saved elsewhere.

The style and complexity of written resources will vary according to ExpLAN's target audience. With the



schools pack, for example, there could be three levels of information, depending on the course an individual is following – the higher the course, the deeper the information will go. But, because of the different approaches †SACREs have to RE, they have no plans to supply school worksheets, etc. Rather, they hope that, by providing the raw data, teachers will be able to produce their own.

†SACRE = Standing Advisory Committee for RE!

Once the **Resource Building Utility** is released, you will be able to create your own set of resources, with pictures, drawings and maybe even video; and you'll be able to create your own indices on any number of subjects. ExpLAN have plans to release their own resource packs later in the year and, of course, anyone else could produce their own set of notes and references, worksheets or resource packs to sell or share.

Are there any drawbacks? Funnily enough, two criticisms I was about to mention have already been fixed in version 1.2. The first was about the index of references; in version 1.0 they were placed in the order in which they were made. HolyBible now has an internal pre-sort routine which will re-order the references in Canonical Book order. Secondly, just as I was about to say how nice it would be to have an icon on the tool bar for resources, out comes a new version with a resources icon on the tool bar – how's that for service?

Good news on searching

I said last month that phrase-searching isn't easy in HolyBible, and it isn't – at least not yet. But as part



of the first upgrade (*which they plan to send out to registered users with the printed manual*), phrase-searching will be included. In the meantime, if you want to search for a phrase, you will have to use the 'AND' criteria. In this way, you can search for 'in the beginning' by asking for 'in' AND 'the' AND 'beginning'. It isn't very elegant and, of course, you will get a lot of phrases you didn't want, but you will at least get the ones you do want.

With the search options, you will get a new menu called **Search Mode**. This allows you to choose a Word Search, Phrase Search or Proximity Search. I can't tell you exactly how the new search mode works in practice, but from the manual, it seems that you will be able to specify different ways of searching for a particular phrase. For example, 'Son of Man' (entered: *Son AND of AND Man*) – in word search mode, it will register every verse where the three words occur, no matter in what order. In phrase-search, it will bring out only those verses where 'Son of Man' occurs as a complete phrase. By inserting wild cards, you can collect different occurrences of 'son of man'. For example, *son AND of AND * AND * AND man* – this time you get 'son

of a valiant man'. If you don't want to use wild cards you could specify how many intervening words are allowed within a verse. For example, if your search criteria was 'Son' AND 'of' AND 'Man' and you set **Words in Between** to 2, you would get both 'son of man' and 'son of a valiant man'. What you are doing in this mode is allowing the search a certain latitude – so it will find the exact phrase as well as those which approximate to the phrase – in the present example, with up to two different words in between.

Finally, by setting a **Proximity Search**, you could look for *son of man* over a specified number of verses, with the words appearing in any order. But even more useful is the ability to find words in 'loose' translations where the verses might have been combined, or, for locating topics that span several verses, such as 'baptism' AND 'sin' OR 'forgiveness'.

Two other new functions included with the next release are the abilities to run paragraphs together when exporting, and to export single words.

Mutterings

There have been one or two unholy mutterings about HolyBible. For example: 1. Some people don't like the idea that you can't select and export a whole chapter or book in one go. 2. Instead of being able to export parts of verses, you have export the whole verse and delete the bits you don't want. 3. Resources are, on the whole, 'read only' – you can't copy, add to or amend them. 4. When you export a verse, you only get an abbreviated form of the book reference (*version 1.2 will allow full or abbreviated book names*), etc.

There are always reasons for possible shortcomings in any program, and not all of them are the fault of the programmer! In the case of HolyBible, some of the problems are technical (*as with partial verse exporting*), some are to do with licensing (*copying chunks of resources, or pages of a copyright translation*), and some are just not worth worrying about, at least not for the time being!

Of course, as we have already seen, some shortcomings are being dealt with. ExpLAN seem to be very flexible and will respond positively to suggestions for change – where they can.

BUT, there are some things they can't alter. One of the problems that the authors have come up against is the copyright of Bible translations. Because some translations may have three claimants to any royalties, the hedges that have to be built around the system to protect these claims, can be high. They, too, are eager to comply fully with publishers' wishes. In this way, by establishing a reputation for safeguarding the rights of others, they hope to persuade other quality publishers to 'get on board'. In the short-term, this might make using some of the HolyBible options frustrating but, in the long-term, by increasing the availability of other material, it should reap benefits for everyone.

Another reason for the so-called shortcomings is the fact that HolyBible is designed with the 'computer illiterate' very much in mind. You don't have to have a degree in C or C++ (*whatever they are*) to be able to operate this piece of software. Inevitably, there has to be a trade off between making the interface accessible to everyone, while making it powerful enough to satisfy the 'power-users'. For me, HolyBible strikes a good balance between the two. Remember that this is the first version of the software, and not everything has been released yet! The philosophy ExpLAN have is to provide up-to-date, relevant material of a high quality.

In the pipeline...

Coming up over the next few months are a number of Bible translations, including a Hebrew Bible with correct right reading text. Also coming is the NRSV Bible with study notes, Russian, German and Greek translations, plus a Bible Dictionary. There are also some resources coming and a schools' pack. Other developments still at the early stage of licensing can't be mentioned yet – but we'll keep you in touch as news filters through...

Something to try

With a Hebrew Bible linked to an English Bible, it would be possible to search for a particular Hebrew word, tracking it through the Hebrew Bible, while at the same time seeing how it's translated into English. That could be quite useful for a Bible study! And with the ability to export single words, quoting Hebrew in other documents will be much simplified.

Hints & Tips

Exporting text – When exporting text from HolyBible into Impression, I suggest that you use an intermediate 'template' document. There are two reasons for this. First of all, you may not like the style definitions that ExpLAN have provided. So, in this dummy document, you can edit the definitions to taste. Then, as you export the DDF text into that document, it will take on your own style definitions. The second reason is that when you export some DDF text, it brings with it thirteen style definitions. When I want to quote a single verse in the God-slot, I don't want the Archive magazine style-sheet clogged up with all of those styles, so I drop the DDF text into the dummy document. I then mark the text <ctrl-A>, copy it and paste it into the God-

slot. That way, it only brings with it the styles it actually uses.

HolyBible problem – Has HolyBible hung up on you? It has stiffed my machine twice now and both times it occurred when I was marking some text ready for export. Now I know that this isn't a statistically significant sample(!) but I wonder if anyone else has had similar problems? I was working on a 10Mb Risc PC and (I think) the only other applications I had running at the time were Impression, Edit and Keystroke. If you get hang-ups too, please report them to Gabriel, giving as much detail as possible: what machine? memory configuration? other applications running? what you were doing at the time? etc.

Paul Beverley, NCS ♦

Floopy

Simon Weaver

Floopy is a smallish, greyish creature who has the task of clearing your screen of apples, ice-creams and helmets (!). Yes, it is another classic and "easy-to-understand, collect-the-goodies and avoid-the-nasties" game. The nasties themselves come in different flavours too, including bees and strange ghostly white penguins. There are 40 levels, and all can be jumped to if you have the correct password. The music is quite catchy, but it can be turned off if you get tired of it.

There's nothing too new here, but Floopy brings together elements from other similar games and mixes them up quite well. I did like the interesting 'hedgehog' type rolling that you have, and the way you can disappear off any side of the screen and reappear at the other – pacman style. As you move through the levels, the author introduces new elements to the game and soon you will be happily crushing penguins up against the wall, and destroying ice blocks to help you get to the 'goodies'.

Floopy can almost get quite addictive at times, but it is very easy to forget to write down the password and have to go back to the last level whose code you can remember. You also have to wait twenty

seconds for the introductory sequence before you can continue and this was usually enough to put me off another go. I also found it immensely frustrating that it is quite easy to get yourself stuck going round in circles sometimes, and only losing all your lives can save you. I found the game a bit slow on an ARM 2, and a bit too fast with ARM 3 – but then some people are never satisfied. I can only guess that ARM 250 is about right, the Risc PC being sufficiently incompatible to require an upgrade. Floopy has been out for over a year now, and isn't one to try and impress your PC friends with, although its very low price (£3.49) shows it wasn't intended to fit this role anyway. Hopefully, a doubling in price with the upgrade should give you some good improvements. You can't expect a massively exciting end sequence with Floopy, but you could always reward yourself with another go...

I wouldn't say Floopy is the best Soft Rock game ever, and it may be worth checking out some of their later releases. Floopy is quite fun, but that's it with the current version. There isn't anything very new or impressive, but the puzzles are nice and easy and the 'baddies' sufficiently unpredictable for a couple of hours of mindless gratuitous ice-cream collecting.

Floopy costs £3.49 from Soft Rock Software. ♦

Shareholder Professional

Dave Wilcox

Shareholder is produced by Silicon Vision Ltd and currently exists in two versions, Releases 2 and 3. Release 2 is aimed at the small investor and R3 at the larger investor. I have been looking at version 3.17 which has the following additions over Release 2:

- ◆ Share Trends
- ◆ Retail Price Index
- ◆ General Market Prices
- ◆ Links to Ceefax, Teletext and Prestel via Teletext adaptor or Modem for auto updates to current share prices.

Apart from these differences, the two programs are very much the same. If, as your portfolio grows, you decide you require R3, Silicon Vision will upgrade for the difference in cost. Current pricings from Silicon Vision are R2 at £79.95 and R3 at £125, both prices including VAT.

So what is Shareholder? The claim is that this is a "sophisticated relational database program for RISC OS. Its function is to store information on stocks and shares as you wheel and deal. It is capable of giving you a graphical display of past share prices, forecasts, portfolio values and dividend lists". Does it fulfil these claims? Let's see.

The package

This program is presented in a video-style box and consists of one 3½" floppy disc and an A5, 36-page manual. On the disc is the Shareholder program, System, demo files and a ReadMe file with any updates or pertinent information available since the last printing of the manual. The manual is clear and concise and covers all required points.

There is no copy protection other than a coded serial number within the program, so back up or hard disc installation is trouble-free. For hard disc use, you simply select and drag to the required destination directory. All the files listed above take up 268Kb, so there is ample space available on one floppy disc for most users, if this media is preferred.

The program

To run the program, simply double click on the application to load it onto the icon bar. Once it is loaded, you have the usual menu options from the icon – info and quit are self-explanatory, and the other option, 'windows', gives a submenu showing the names of any files loaded, as this program is capable of working on multiple files. If you wish, as you start to use this software, you can use the interactive help system supplied with RISC OS to help you on your way.

Initially, you have only one file available, 'Demo'. So to start, you can load 'Demo' in any of the usual ways, double click or select and drag. You can, of course, jump straight in and create your own portfolio. To create a new file, simply click on the icon on the iconbar.

If you load an existing file, you are presented with a summary of your portfolio showing the Share/ Company name, the amount invested, the current value and any gain or loss made on these shares. At the bottom of this window is a Portfolio Total giving you, at a glance, the Total Value and Total Gain for your investments. If you are setting up a new portfolio, you are presented with a company sheet, initially nominated as page 1. This sheet is where you enter the details of the company name, the quantity of shares purchased, the date of purchase and the cost. You will need to create one of these pages for each company for which you own shares.

Once your portfolio has been created, you update each company sheet with all transaction details and dividend payout details as and when you make them. As the data is entered, all other aspects relating to this information are updated by the software, so portfolio maintenance is very quick and easy, with the current status only a button push away at all times. Whenever you subsequently load your portfolio file, you obtain the summary sheet for your investments. It is from this summary window that all the work is done to your portfolio. Pressing <menu> over this window allows you access to the available tools, company pages and facilities via the main menu.

Most of these options are obvious and do what they say. There are a couple which go a little deeper. The first of these is 'Misc'. This has two sections, the first of which is concerned with the display order for the summary sheet. The sort can be by name, by alias or by sheet number. (The alias name is that used by the auto update system, e.g. Prestel). The second section is relative to the gain calculation performed by the program, with options to include R.P.I. and/or dividends. The gains value is calculated to a more realistic level, taking into account dividend income and price increases due to inflation.

The 'Tools' section has two tools, the first of which is a simple calculator. To all intents and purposes, it is the same as !Calc, but with one memory.

The second tool is the calendar. This shows one month at a time with the tax week number shown down the lefthand side. It is this window where the R.P.I. is entered. The R.P.I. is published each month and is used in the calculation to estimate the gain for each transaction.

With the 'Print' option there are three output methods. You can output to printer using the standard Acorn printer driver. You can send the file as plain ASCII text or standard highlighted text. If plain ASCII is selected, the option is available for the resultant text file to be saved straight into another application by dragging the file icon. If 'Print' is selected over a graphic window, the output goes direct to printer or is saved to disc as a printer output file.

The 'Save' option also has two options. You can save the whole file as a shareholder datafile, or the whole file can be saved as a CSV file, which

ShareHolder	
Display	↕
Save	↕
Print	↕
Tools	↕
Misc	↕
Info	↕
Remove	

provides a second way of importing your data into another package.

'Display' is the work-horse of this application, enabling you to move quickly around the available displays. The menu is divided into two main sections. The top part covers the selection of a page for various actions: Show/Edit Page, Delete

Page, Page History, and Page Forecast. These four options bring up the same selection window, so that you can scroll to the required selection. Clicking on this choice will open the desired company window for you, or you can type the name into the editable field at the top of the window. The bottom section opens windows to various parts of the database for

quick summaries like Total Value, Price History, Portfolio History (displayed as a ribbon graph showing share performance), Portfolio Forecast (an educated estimate of possible performance – you must update share prices, etc, on a regular basis for the estimate to be of any use), and a Dividend Listing, showing all dividends received, the dates paid, tax credits and the number of shares held.

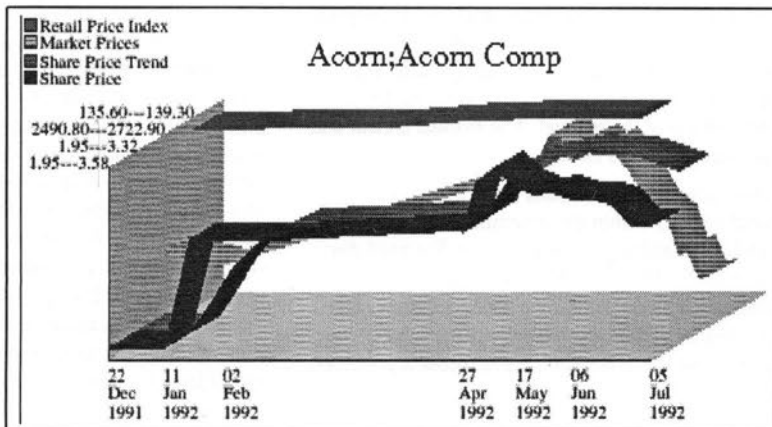
If you have access to a teletext adaptor or modem, it is possible to auto-update share prices on a regular basis. As mentioned above, if you want to use this facility, the alias section of your Company page should match the share name used on the

SI::U Tip.\$,Shares.Demo

November 1994

R.P.I. Update

Wk.	Mon	Tue	Wed	Thu	Fri	Sat	Sun
31		1	2	3	4	5	6
32	7	8	9	10	11	12	13
33	14	15	16	17	18	19	20
34	21	22	23	24	25	26	27
35	28	29	30				
36							



information downloaded. It is possible to use several alias names for each company if required, as this will enable you to update prices from different sources. Updating your database is a simple matter of dragging the update information file onto any of the Shareholder windows.

Conclusion

This program is well-written, was easy to set up and

use, and has worked without any problem at all. Not one hang-up!!! The method of presentation and layout is unusual at first sight. To my eye, some of the tabulations are out and therefore make some of the tables unsightly. However, you soon adjust to this, and the main thing is that all the information required is there and logically displayed. I would recommend this to all interested parties. ♦

Module Writing

Nicholas Marriott

RISC OS provides a simple method of extending the operating system, using *relocatable modules*. These are loaded into the RMA and can provide SWIs and star commands for other programs or the user. They can also react to messages from the operating system and even run as WIMP tasks or languages. This article aims to introduce the basic knowledge needed to write simple modules. More complicated aspects can be covered in a later article.

The module header

The core of a module is its header. This consists of eleven word-length entries at the start of a module. RISC OS uses this header to call the module when it is required such as when the user executes one of the star commands belonging to that module. The header is detailed below:

Offset	Type	Description
0	offset to code	start code
4	offset to code	initialisation code
8	offset to code	finalisation code
12	offset to code	service call handler
16	offset to string	title string
20	offset to string	help string
24	offset to table	help and command keyword table
28	number	SWI chunk number
32	offset to code	SWI handler code
36	offset to table	SWI decoding table
40	offset to code	SWI decoding code

I will discuss each of these entries in turn.

Start code

The start code is used by both WIMP tasks and languages. It allows a module to be run as an application, but it is, unfortunately, too complicated to explain in this article.

Initialisation code

The initialisation code is called when the module is first started up. It is typically used to claim workspace. When a module is loaded, it is allocated a *private word* in the RMA which is usually used to store a workspace pointer. The private word pointer is always passed in R12. This extract shows how a typical initialisation entry might claim workspace:

```
.Initialisation_Code
STMFD R13!, {R7-R11, R14}
:
MOV R0, #6                ; reason code 6 - claim RMA
MOV R3, #1024             ; lk to be claimed
SWI "XOS_Module"          ; call OS_Module
ADRVS R0, bad_claim        ; V set?
LDMVSPD R13!, {R7-R11, R14} ; if so, exit with an error
ORRVSS PC, R14, #1<<28
STR R2, [R12]             ; store workspace pointer in
:                          ; private word
LDMFDP R13!, {R7-R11, PC}
```

A piece of code within a module (except start code) should not call an error handler. To produce an error, it is better to exit with V set and R0 pointing to the error block (as above). SWIs in the module code must always be the X form so they do not produce errors but and code should exit with an error if they return V set.

Finalisation code

The finalisation entry in a module header is a pointer to the code which is called when the module is being killed, probably by *RMKill but also possibly by *RMTidy or OS_Modules 3, 4, 8 and 9. This code should be used to tidy up ready for the module to be removed. If the private word is a non-zero value, RISC OS attempts to release the workspace it points to. When a module returns with V set after this code is called, it is left in the RMA and the error pointed to by R0 is produced. This is quite useful if other tasks are still using the module:

```
.Finalisation_Code
STMFD R13!, {R7-R11, R14}
:
LDR R12, [R12]            ; read workspace pointer
LDR R0, [R12, #4]         ; read tasks using count
CMP R0, #0                ; are there none?
ADRNE R0, inuse_error     ; if not, exit with error
LDMNEFD R13!, {R7-R11, R14}
ORRNES PC, R14, #1<<28
:
LDMFDP R13!, {R7-R11, PC}
:
.inuse_error              EQU 0
                          EQU  "Some applications are still using this module."
                          EQU  0
```

Service calls

Service calls are messages passed around by the operating system or other modules when a noticeable event occurs. The service call code is called when a service call is received, with the number of the service call in R1. Service calls can be *claimed* by a module, meaning that the module is going to act on that service call and does not want it to be passed on to other modules. There are far too many service calls to describe them all here, but these are a few of the more useful ones:

Name	Number	Function
Service_Error	&06	Called when an error has occurred, R0=pointer to error block. MUST NOT BE CLAIMED
Service_NewApplication	&2A	Called when a new application has started, set R1 to zero to prevent new application starting.
Service_ModeChange	&46	Called when there is a mode change. MUST NOT BE CLAIMED

You can also send your own service calls using SWI OS_ServiceCall, R1 must point to the service number and R2-R8 can point to any data required. If the service call is claimed, R1 is returned as zero, otherwise it is preserved.

Title string

The title string offset points to a null-terminated string for the module title (used by *Modules).

Help string

The help string, used by *Help is a null-terminated string in this format:

Module name <Tab> v.vv (dd mmm yyyy)

for example:

```
EQUUS "TestMod"+CHR$(9)+"1.04 (" +MID$(TIME$,5,11)+")"
```

Help and command keyword table

This is a list of star commands in the following format:

Null-terminated command name, word-aligned

Offset to command code

Information word

Offset to syntax message, null-terminated

Offset to help text, null-terminated

The information word contains four bytes:

Byte	Description
0	Minimum number of parameters (0-255)
1	OS_GSTrans map for first eight parameters
2	Maximum number of parameters
3	Flags: bit 31 = command is a filing system command bit 30 = command is a *Configure command bit 29 = Help offset points to code not string

Of these only bytes 0 and 2 are really useful, which are the minimum and maximum number of parameters respectively. The others should be left at zero. When entering command code, R0 points to the command code and R1 to the number of parameters.

SWIs

Four entries in the module header are used for SWIs, but only three of these are really needed. The SWI decoding code is quite complicated and so it is omitted here – it is not usually needed anyway. The first entry is quite simple; it is a number which is used as a base for the SWI numbers to continue from. For example, the WIMP's SWI chunk is &400C0, thus Wimp_Initialise is SWI &400C0, Wimp_CreateWindow is SWI &400C1 and so on.

SWI handler code

The SWI handler code is called whenever one of the module's SWIs is called. The recommended Acorn code for handling this is as follows:

```
.SWI_Handler_Code
LDR R12,[R12]           ; get workspace pointer
CMP R11,#(SWIs_End-SWIs_Start)/4
ADDCC PC,PC,R11,LSL#2    ; dispatch if in range
B UnknownSWI
.SWIs_Start
B SWI_00
B SWI_01
.....
B SWI_nn
.SWIs_End
:
.UnknownSWI
ADR R0,UnknownSWI_Error
ORRS PC,R14,#1<<28
:
.UnknownSWI_Error
EQUd &1E6
EQUs "Unknown <module> operation"
EQUb 0
```

This code simply checks to see if the SWI number is in range. If so, it calls the SWI and, if not, it produces an error. When the SWI is entered, R12 is the contents of the module's private word and R0-R8 contain the data passed to the SWI.

SWI decoding table

This is simply a list of SWIs supported by the module. Note that, for each one in this table, there must also be a branch instruction in the same position in the SWI handler code. The table consists of the SWI prefix followed by up to 64 SWI names, e.g.

```
EQUs "Module"           ; SWI prefix
EQUb 0
EQUs "SWI00"            ; first SWI name
EQUb 0
.....
EQUb 0                   ; zero byte to finish table
```

So, calling SWI Module_SWI00 would call SWI handler code which would jump to the required entry.

Example module

The very simple example module provided on the monthly disc does three things:

- Provides a star command, *SetMode which will set or display the current mode.
- Provides three SWIs, Mode_CurrentMode, Mode_Width and Mode_Height, all of which return information about the current mode in R0.
- Produces a beep every time the mode is changed.

If you have any comments or questions about module writing, please contact me via the Archive office. ♦

ProArtisan II on CD

Bob Ames

ProArtisan II on CD runs best on RISC OS 3.1 or later, but it will run on RISC OS 2 with a small number of restrictions, such as the radio buttons, are not being 3D. Clares suggest using a multiscan monitor to achieve the best results but it is comforting to know that the images are usually saved in high resolution, even when a low resolution monitor is being used (say, in mode 15). This means that if the monitor is upgraded later, the work can be displayed in mode 21 or 28 on a higher resolution monitor.

The minimum machine RAM appears to be 2Mb, although some of the images from the resource discs will not load, even with 2Mb of RAM available. Usually, several images may be held in memory on a 4Mb machine.

Loading the application

The CD version of the program takes a considerable time to load, compared with the disc version (I borrowed a friend's copy for comparison) but that will depend on the speed of your CD drive. However, this is a small price to pay for the facility to load PhotoCD images directly into the computer for further manipulation.

The CD version does not need initialising (the process of registering a disc with personal details), as the floppy version does, and the program can still be installed on hard disc as usual, thus avoiding the slowness of access from CD. Thus the best of both worlds may be had – PhotoCD working and hard disc speed.

Documentation

The manuals for many pieces of kit seem to have been written in JapFranGlais, translated from the original software developers' notes, via American, by a German living in Bromley. However, probably because Acorn computers are a British phenomenon, the companies writing software normally have English speaking staff. Clares have produced a fine example in this manual – it is divided into sections which are short enough to read in one go, while containing sufficient information on all features.

I like the idea (simple in the extreme) of starting each section on odd numbered pages, so that each starts on the right side of the open book as you read it. Sometimes this means a blank page on the left but this is noted as a blank page.

Especially for people like myself (for whom the little self-adhesive labels were printed "at the last resort read the manual"), there is a tutorial early on in the manual – I discovered this because my train was late, so I had time to read it!

Seriously, the manual should be read at least as far as the end of the tutorial section because, although you might not want to make a cube with a picture of a big cat on each of its faces, the action of doing so helps the novice user to understand some of the facilities available.

Images available

The images on both Resource floppy discs (disc 2 is available free from Clares on returning the guarantee form!) are stored in the Acorn !Squashed format, and need unpacking before use. I am used to double-clicking on the file name to load it, but any squashed file must be dragged to the ProArtisan icon on the iconbar (or dropped onto an empty ProArtisan window) to load it. This may seem a small point but it's surprising how set in your ways you become!

To unsquash a file, the application !Squash must first be 'seen' and then the squashed file may be double-clicked. Provided there is enough room on the disc, an unsquashed copy will be saved. There is a catch awaiting inexperienced users (but it is documented in the manual). It is not possible to add or merge images to squashed sprites in the sprite pool. They must all be unpacked first or they will be replaced by the new sprites.

Of course, sprites and drawfiles may be loaded into ProArtisanII. There are particular procedures to be followed in these translations. There is a clever converter application included in the package which will enable ProArtisan, RenderBender and Illusionist files to be converted into sprites.

I am used to the question "Do you want to save modified work?", so I was surprised not to be challenged when I closed the window on my first artistic attempts! I went on loading and discarding the example files from the resources discs and then got the message "insufficient memory". Eventually, I realised that the images were still in memory although not visible on screen. The iconbar menu gives the option of showing each or all of the files in memory, as well as options for clearing out old images. Once I got used to this, it was all very logical, but the differences from my old favourite, PipeDream, continue to disturb me.

Menu facilities

Via the !Options package, the menu can be arranged so that little-used option choices can be "greyed-out" next time the program is run. This is all well and good but I prefer the PipeDream method of long or short menus, where the menus themselves are shorter and clutter up the screen much less. Moreover, this facility is available immediately with PipeDream.

Have you got a frisket?

The 'frisket' seems to be a quite complicated thing, especially where the manual talks about the differences which take place using processes while the frisket is in operation. So far, I don't fully appreciate the use of such facilities! I shall try to remember that the frisket is an area which cannot be drawn/painted/coloured over – except in exceptions!

Using the package

The art package is simplicity itself – select the tool, size it, choose a colour... and paint! The line drawing tools are quite different from DrawPlus – but then they would be, wouldn't they! – I always find it difficult to use a new package when a previous example is well known.

It would appear that an additional colour card is essential for professional working – these are available from CC or State Machine. You will then have 16.7 million colours to choose from – my local trade paint shop only has 3000 different colours! However, all the colours are not available at once – 256 colours are chosen from the total available and the machine always holds the full 24-bit values and

works at the highest resolution. This means that even without a card or high resolution monitor, all the files are excellent quality. The only exception is when the Save As option is used, when the file is saved to the current settings – to save memory, for example.

Extra facilities on the CD version

The CD of pictures which comes with the CD version appears to be a Cumana product (it's called the Cumana Photo Album Volume 1), and has 82 pictures on it. These range from steam trains to hang gliders, castles to freeways, shire horses to seagulls, and five views each from Scotland and Sydney!

The neatest feature, which allows a browse through ten of the CD's pictures at a time, is called Show CD Album – it's rather like looking at a stamp album in which ten pictures are represented on each page.

Another clever feature, only found on the CD version, is CLIP. If this is selected before loading a picture, the original appears with a set of clip lines on it. These can be moved so that only part of the image is actually loaded for further work, thus saving memory.

The cost of PhotoCD is unlikely to spoil the chances of this excellent software doing well. Typically, it appears that 100 images can be stored on each blank £5 disc. To store each image would cost up to a maximum of 60p a go in high street shops but this cost would be much lower if batches were done at a time. It would appear best to avoid professional bureaux with their much higher charges, although the two I contacted would be prepared to negotiate price if an account were held with them. This is a similar attitude to that held by conventional photo print/processing facilities.

Printing facilities

I really liked the Printing dialogue by which it is possible to select which part of the page area is to be printed. The position on the page, the scale, the size of margins (taken from the current printer driver if one is loaded) and more, may be altered before printing.

Any drawbacks?

The only real fault I could find was with the menu icons. They don't really convey function as well as they could. I find difficulty remembering what some icons stand for, and whether I am expecting a function or a sub-menu when each is clicked. In particular, the Process submenu (an Eye for an icon), the Undo (an arrow pointing towards the zoom scale) are not clear. The Input/Output icon (arrows left and right) is OK but confusing, and the

Zoom Scale bump buttons are not next to the figures which indicate the current zoom scale, where they should be! The icon for Sprite Tools (scissors) is fine when the function is understood.

Conclusion?

All in all, this is a very worthwhile package, if a bit slow in loading from the CD initially.

ProArtisan II CD costs £160 inc VAT from Clares or £150 through Archive. ♦

The Time Machine

Gabriel Swords

This isn't a 'destroy everything in sight' type of game – brute force and ignorance are the very least of your worries. What you need is a brain the size of a planet, the Times crossword mentality and a slightly out of focus sense of logic... apart from that, the game's a doddle!

Time Machine comes from 4th Dimension and is a sequel to the Haunted House – though you don't need to have played that game, and any link between the two is very tenuous anyway. The game starts with the hero of Haunted House going for a much needed walk; after only three miles of walking, it appears that his bladder feels the call of the wild, and is in need of some relief. The good news for said bladder is that our hero notices a blue box in the distance; relief seems to be at hand! The bad news is that the blue portaloo won't open that easily. Normally, a penny in the slot would do, but not this time; this time you need a simple password, and the ability to work out a simple fraction. I say 'simple'. It's simple once you've worked them out – in fact, once you've done them, you wonder what all the fuss was about. While you're getting there though, the entrance exam seems like a nightmare.

Once inside, you'll notice a distinct absence of any kind of loo, but that doesn't matter because what you do find is that you've entered a time machine. All thoughts of bladder control disappear as you try to work out how the thing works. And this is the essence of the game – finding out how things work. There are buttons to push, levers to pull, doors to

open. All you have to do is push the right buttons at the right times and put the right bits together in the right order. The trick to this game is to try everything you come across. Touch it, press it, mix it together with other things... and see what happens.

As you wander around, inside and outside of the machine, you find objects of no apparent value – a can of fly spray, a bottle of water, a potted plant, etc. You're given written and oral clues, like: 'this lamp is like an ear to a blind man'!!! You're set tasks, such as, "How do you make a polished ruby using two aluminium cans and a bit of history?" – easy, once you know how. Answer this, and the many other questions, and you're on your way to finding the meaning of life et al.

Ultimately, what you're trying to do is rescue someone from a time vortex. To do this, you must find the six missing pieces of the key of time. Fair enough! To find the missing pieces, you travel about in time and space solving the puzzles which lead you to the missing pieces. In the process, you move through a bit of earth's pre-history; on to Mars where you enter an ancient pyramid (or do you?); then to Dune – where you could easily get lost; on to Automatia where you'll find some sorting out to do; you even find yourself in Abbey Road playing around with CDs.

As you go, a percentage figure on the icon bar tells you how well (or not) you're doing – what you're aiming for is 100%. By the way, if you happen to get killed, some smug sounding voice tells you 'oh dear' – I hope this isn't the voice of the programmer!

Suggestions for play

If you have the three necessary skills mentioned earlier, you'll fly through this game in about six days – working through the night, skipping meals and taking time off work. If you don't have those skills, you may as well commit suicide now, because the frustration will drive you to it eventually.

Alternatively, you could do what I did, and get some friends involved. This is not a game for hermits. I had help from a friend who is a chemistry teacher; a mathematician; my thirteen year old son; my ten year old daughter; someone else who was playing the game on his computer (with his friends); and a host of encyclopaedias, 'A Thousand-Things-You-Didn't-Know-About-Everything'-type books, and a dictionary. The other thing to do is to save everything as you go along, under different file names; that way, if you make a mistake and lose something, you can at least go back to where you left off.

The Time Machine comes on five floppy discs, and you'll need at least 2Mb of RAM to run it. There are over 2Mb of sampled sounds and 3.25Mb of sprites, 95% of which are scanned graphics.

Is it a good game?

Yes, I suppose it is really – if you don't mind the frustration, the headaches, the waking up in the night with another idea that might work. If you like games to be a challenge, don't mind being patient, and like working out problems, then this is a very good game. The sounds and graphics are just right for the game, and the programmer's sense of humour comes through.

What happens at the very end? ERM!!! I'm not sure – I haven't quite finished – maybe in a year or two?

The Time Machine costs £25.95 from 4th Dimension or £24 through Archive. ♦

Caxton Press

Dave Walsh

Caxton Press from Newman College Software is, first and foremost, a simple DTP program which allows users to create a newspaper front page layout on their computer system. As far as I know, it represents the first conversion from Research Machines to Acorn. For schools who use both the old RM machines and Acorn RISC OS, this represents a good move, allowing the same software to be run on different platforms.

I have been looking at Caxton Press version 1.00a which has been converted for the A3000 series. The program is not multitasking, and requires a printer driver to be pre-loaded before it will operate.

Although it will load and run on newer machines, this copy is unable to print on the new printer drivers, which means that printing must take place on an A3000 using RISC OS 2.

The program itself is very simple to use, being based on a single word menu system. This can either be keyboard or mouse operated. After choosing whether you wish to work on an old or new piece of work, you are into the program proper where the

'layout' choices are given. Here you choose to work on the Masthead (newspaper title), Banner (the headline), Stories, Print out or Saving options. Each of the areas follow a similar menu structure, with each element reached from a set of words along the bottom of the screen.

Twenty six different, bit-mapped fonts have been provided within the program, with names ranging from Aladdin to Zebra. These are rather nice for children's work, allowing a significant visual selection of writing styles. Small elements, such as the ability to add speech quotes and the half sign have also been considered, along with rule off thickness and styles.

Up to four stories can be written for the page, each with its own heading. These are numbered on a 'thumbnail' of the finished product, so that the user can decide which story to work on next. As there are two stories per column, the room for one diminishes as the length of the other increases. Any spare space is left as a picture frame for later use. It should be noted, however, that these pictures are placed by the low-tech method of scissors and glue, after print out!

All the elements of the page are optional so that, for instance, by leaving out the banner and headline, you can create an inner page layout.

The documentation is extremely well written, being both thorough and clear, with examples of newspapers produced. The program is so simple to operate that most children who are capable of writing a story would be able to produce a simple newsheet.

As a program, it would be most beneficial to schools wanting similar software on their RM and Acorn

equipment. It is designed to be simple, and achieves this aim at the expense of the multitasking environment, where pictures, text and fonts can be shared between applications. Obviously, other newspaper creation methods are available on the Acorn RISC OS machines, but this one successfully presents a simple approach to the field, whilst removing the need to master RISC OS conventions.

Caxton Press costs £30 +VAT from Newman Software Ltd ♦

Cable News II

Ned Abell

In previous reviews – a good year ago – I've mentioned the existence of Cable News and, indeed, many of you may have already used it. I had an early review copy, found quite a lot wanting and, having spoken to Lindis, decided to wait for Cable News II for review. This has been a long time coming, is an improvement on the original, and has branched away from being a straight presentation package, becoming more interactive.

Originally, you created a series of presentation "Slides", in an application called !CableMake, linked them together with effects and then saved the resultant story in your working directory. When you ran the second application, !CableView, you were able to see the sequence.

The new package will now allow you, by clicking on a hot spot, to jump between slides, forwards and backwards, and thus the sequence could provide point-of-sale information, interactive town plans, etc, so it now falls into the category of a multimedia program. Hot spots can also run other tasks. There is a great improvement in the program here, and one that will be of use to many who need to present information publicly.

As a maker of videos, I'm primarily interested in a tool that will allow me to caption and title – indeed, I have just used it for a video about a British Study Centre in France. Previously, the old !CableMake and !CableView would co-exist on my 4Mb A310;

now they are bigger and need more memory – a 4Mb machine is the minimum requirement for the new package. I also ran them on a Risc PC, moving slides back to the A310 to use the genlock.

The manual is very clear but has no index. The software is sensibly protected by embedding your details. Example demonstration stories are provided for both Risc PC and A series machines – on the Archive monthly disc, if space permits.

!CableMake

Slide creation is simple and you can use a window or full screen. A background is selected and filled with colour, sprite or motif, then a frame, made into which you drag text (or type it) sprites, replay files or drawfiles. Here's one of the strengths of the program in that you use styles for your text so it's like any DTP program but, additionally, you can set shadow and colour. The frames can be filled and bordered with their own shadow. Thus, for my application, it's simple to set up a house style box and a text style, and then put the two together in the right place on the video picture for captioning. Keeping the box in place and changing the next slide's text allows simple animated captions.

The first problem was that Cable News does not accept Artworks files, or JPEGed or GIFed images, so you have to convert everything to sprites or drawfiles! Whilst !ChangeFSI will help a lot, I think that the lack of Artworks support is a major omission and one of my complaints about the earlier package.

I'm told that it will be supported in a later release, and yet !CableNews is a package that first came on the market in early 1993, and the Artworks viewer is included with many other applications. It is a de-facto standard. There is no support for Iota Animator files, although these are fairly new and, again, will have to be catered for. They can, however, be launched from slides using the hot spot to to run a task or run a file. The Replay support is fine if you have the means of making Replay files, but most people don't. You can import from PhotoCD because !PhotoView exports as sprites.



The package now supports OLE and I found this of major help and a good upgrade from CableNews I. Because anti-aliased text with a lot of detail can take a long time to redraw on an ARM2, OLE is vital. Any frame can be edited in !Edit and then re-imported. More than once, I was grateful when an é needed to be an è in a long bit of text. Caution here though because memory constraints will cause problems – you can get !CableMake, !Edit, !Draw and !Paint to work together in 4Mb, but only by having a small font cache.

The results were excellent. I could make complex dissolving caption sequences by working forwards and backwards using common frames to keep registration. There is video support in the slides and stories to allow transparency, and I can't wait to have a Millipede genlock on the Risc PC to try high quality graphics – special Modes are provided to give the maximum TV resolution. You can also print the slides, and this option is very useful for

giving out notes to an audience. In future releases, you will also be able to print to 35 and 70mm slides.

Stories

The method of linking the slides is crucial, and CableMake provides a good selection of effects, such as unrolls and blinds, to make up a story. The story can be auto-run or done manually, time delays are preset and it beeps when slides are ready for display. A true roller caption is not provided, but slides can be slid down into position one after another. There is an editing system so that both a story and a slide can be loaded into !CableMake.

!CableView

This application takes a story file and displays its slides. You can distribute this software in non-commercial applications if you own !CableNews, so it's possible to give a disc to clients for viewing on another computer or update point-of-sale information on several computers. Commercial applications need a licence from Lindis.

The display method can be preset from the preferences options and, if you stop the display, you can step between individual slides. It's also possible to put a large pointer on the screen.

When you quit the application, it infuriatingly asks if you want to do so!

Conclusions

CableNews II is an improvement on version 1, and existing owners should upgrade. If you are buying a titling or presentation package, there is also the choice of !Titler from Clares.

CableNews is very intuitive to use and allows menuing over the full frame slide – very useful to tweak colours and position over a video frame. I've mentioned the drawbacks, but would recommend this as an very good starting point for producing excellent presentations. I had a play with 24-bit sprites on the system but soon ran into memory problems, although this is because of my machine, not the package. A computer with 4Mb is fine for overhead projection notes etc and lower resolution 256 colour graphics. I think the XAT Video Utilities disc should be included in this suite of programs, to provide VT clocks and test cards for setting up equipment – call it !CableSet? I would also move the

story-making part of the program into a separate application so that, if memory is tight, you can reset the story without loading the whole of CableMake.

This application works well and does what it says. If you are involved in any sort of presentation, you will need it. There are plans to expand its capabilities and existing owners will be able to receive updates by returning master discs. I'm now standardising on it and building up a library of styles and slides.

My clients like what it provides, and that's good for business.

CableNews II is priced at £149 +VAT from Lindis International or £165 through Archive, with low cost upgrades from Presenter Story and CableNews I, obtainable through Lindis.

I'm happy to discuss video and audio uses on Acorn platforms either via Paul or on 100341.2675@compuserve.com. ♦

VerbMaster-French

Graham Campbell

I am looking here at VerbMaster-French by Nigel Caplan which is a Shareware package.

Learning and practising verbs in a foreign language is a difficult job which is fairly tedious at the best of times, since it involves much repetitive learning and testing, so any way in which the trusty computer can help with repetitive random tests is to be welcomed. It's then just a question of whether one likes, and can get on with, the design of the program.

What you get

VerbMaster comes on a single 800Kb floppy and is a 'modular' verb learning and testing package. Registration with the author costs £7.50 for a single user (£10 site licence) for the first verb 'module' (currently this is the French one), and £5 (site £10) for subsequent ones. Potential users need RISC OS 3.11 or greater and, if you're working from floppy, the application needs to have 'seen' the !Scrap directory.

I have run the program on my A440/1 with RISC OS3 and ARM3, on an A3000 1Mb machine with OS3 upgrade, each with no problems. I also ran it on a Risc PC, since the author wondered whether there would be any problems. There didn't appear to be any major ones; the Homerton Medium font which I had working for the Desktop didn't upset the program's window display, except for one prompt in red in the Test Window – no illegibility problems, though.

Having printed out the text_file containing the ten pages of (abridged) User Guide, it was clear that the program is a comprehensive one. With it, you can learn on-screen the verbs you want to grasp, get a randomized test in all (or one, or all-but-one) tense(s), and you can choose 'regular' or 'irregular' verbs only, or both. If you select the test to be done on-screen, you state the number of questions to be fired and click START.

There's an option for a printed test (with answers printed at the end) and then the randomised questions are sent to a text file, ready for printing out. No obvious check is made to see whether the number of questions asked for is greater than the number of verb-forms in memory, so don't select 500 as I did – (I was just bug-chasing!) – you get an infinite look at the hourglass! Also, you can get a CSV file 'print-out' – for loading into PipeDream or a Word Processing package – of all, one, or a group of tenses for off-screen learning.

The tenses available are the Present, Future, Imperfect, Perfect, Pluperfect, Past Historic, Conditional (curiously called the *'Future Conditional'* within the program), Future Perfect and the Conditional Perfect. The Present Subjunctive Mood will come later. New verbs can be added from on-screen menus, verb-forms can be edited or deleted from a module, and the edited module saved back again. Double clicking on any module loads its contents which overwrite the previously-loaded module.

How it performs (pros and cons)

Double-clicking on !VerbMast loads a utility module and opens two filer windows on screen. In one, there's a !Help file available which conforms to Acorn's Interactive Help system and directories housing the text files of the 'manuals', the modules you subscribe to or create, and the printouts you may create. Double-clicking on !French in the other filer window loads a 'tricolore' icon on the icon bar ready to start, having claimed 512Kb of workspace.

Clicking <select> on this brings up two windows – a 'learning' window showing the verb under study and a control window. There's only room for the *je / tu / il / nous / vous / ils* forms so, alas, one in the *oeil* for *les dames*. Will they be consoled to read that *il a* is labelled "He (She&It)"? Also, the extremely commonly used *on* doesn't get an airing. This is a shame, since in the compound tenses taking *être*, much is made in the testing process of 'agreements' over plurality and gender and so you never see printed out, or on screen, *elle est allée* or *elles sont*

parties, for example, or even the *non*-agreement of *on est allé* meaning *we went ... / people (in general) went ...*

Using the mouse and clicking in the Control-Panel's windows changes the verb and its tense displayed in the Display Window. Also on the Control Panel are buttons for initiating a test, adding an irregular verb, adding a regular verb, or for what is called 'cyclic addition of an irregular'. You are supposed to be able to add tense after tense to an infinitive without having to re-enter the infinitive, but this feature wasn't working on my review copy. Clicking <menu> over the Display Window gives access to a menu from which you can edit a verb, delete a verb, and save back the edited module.

The verb test

Having learnt all these verb forms, it's time for the test. Select 'x' questions (10 by default) and we're off. Two windows open – the Test Window and the Statistics Window. I must admit that I find the

The screenshot shows the VerbMaster software interface. The top window is titled "Test verbs" and contains a "Question:" field with the number "4". Below it, a text prompt says "Please enter the je form of the Future Conditional tense of the verb partir : (Enter the whole verb including pronouns)". There are input fields for "je" and "partir", and a "Don't know" button. Below the input fields is an "ENTER" button. The bottom window is titled "Test Statistics & Answers" and contains a "Statistics:" section with fields for "Correct: 2", "Wrong: 1", "Questions left: 16", and "Total questions: 20". Below this is a "Correct Answer:" section with the text "The vous form of the Future Conditional tense of the verb vouloir is: vous voudrez". There is a "Your Answer:" field with the text "vous voudriez". To the right of the "Correct Answer:" section is a "Question:" field with the number "3" and a "Wrong" button. On the far right, there is a small window titled "Accents" with a grid of accented characters: é, è, ê, à, â, ô, and û.

screen now too cluttered. Icons show us, in the Test Window, which question we're on and ask:

Please enter the [ils] form of the Future Conditional tense of the verb [avoir]:

I got the first verb 'wrong' because my A440/1 wakes up with CAPS ON, and a correct answer in upper case is marked wrong. A minor point, but a *FX202,16 from within the program (or in the !Run file) would have sorted that one. For ease of entering accents, there is a window with the seven most-needed accented characters showing, which can be clicked on to insert them into any of the input icons. You need to have a wide screen mode selected and to put the accent window outside the test windows, since whenever you click <enter> to enter your answer for assessment, it goes to the back of the stack and you have to call it up again each time from the menu. I have to confess I find it easier, if I'm inputting from the keyboard, to use good old Alt+233 for é etc. Reaching for the mouse for the sake of a final é after having typed my way through *vous vous seriez habillé* gets a bit of a pain, especially if you've had to call up your accents window (again!) first.

One good thing and one bad thing together now become evident. Verbs which have become reflexive in compound tenses often need an agreement, as do the few verbs which always take *être*. *Vous* could be a lad's night out, or the W.I., or one lad, or one W.I. member. So the 'correct' answer for the computer is *vous vous seriez habillé(e) (s)*, and you may well think this a pain to have to enter. Well, it is, but a window to the side of the answer-input-box can be called up and you can click on one of a menu of endings: *(e) / (e)s / (e) (s) / s*. (I should have liked to see a null selection here. If a plain *s* qualifies for being on the menu then 'nothing' does too, since *il s'est habillé* in a sense 'agrees' with a non-ending, and a student must deliberately decide to add *nothing*.) The down-side is that you always have to think in terms of these wretched endings. It's a pity the test can't say:

Using *PARTIR*, how do you say: "They would have left (m)" (*ils seraient partis*)

and, later ...

Using *PARTIR*, how do you say: "They would have left (f)" (*elles seraient parties*)

I just found it a bit tiring on the eye and brain being asked the rather grammatical question mentioned above (*Please enter the ...*) and then have the statistics window telling me I've got 'x' correct / 'x' wrong / 'x' questions left out of a total of 'n' questions, and that:

The [ils] form of the [Future Conditional] tense of the verb [s'habiller] is [ils se seraient habillés"] . Your response is Correct and your answer was ["ils se seraient habillés"] .

You could argue pedagogically that this is reinforcement, I suppose!

Conclusions

The program very comprehensively tests full grammatical knowledge of all tenses (no negatives or interrogatives). Note that there is no reference to meanings – you are tested **grammatically**. The ability to print out verb information and tests is very useful, and that all works fine. There's a minor bug in the scoring system in that your last response doesn't get logged.

A few of the verb forms are wrong in the supplied module:

se lever is missing its grave accent in all the Future and Conditional forms.

vouloir in the plural conditional forms is incorrect – as my screen shot shows!

faire gives *vous faites* in the Present Tense

attendre gives *ils attendent* and *descendre* gives *ils descendent* in the Imperfect.

lire gives *ils lûrent*, *voir* gives *vous vîtes* and *vouloir* gives *tu voulous*, all in the Past Historic.

It's just a question of loading the module into !Edit and chasing up the errors but it's a tad annoying to have to do so – and, of course, presupposes that you know the stuff before learning it from the program! Which of us, though, has not made any mistakes when entering data into our programs?!

Let him who is without sin !

I hope this is useful to any prospective French students out there. In the end, you takes your choice and – with Shareware – you pays your money, I hope! ♦

CD-Fast

Fred Grieve

Those of you who have taken the plunge and installed a CD-ROM drive will probably have already experienced some slight disappointment when you first used the system. I refer to having hundreds of megabytes of data on-line and having to patiently wait for the computer to access it as CD-ROM does not have very fast access times. A CD-ROM drive is noticeably slower than a hard drive.

As the title suggests, this utility from Eesox is designed to speed up CD access times. It does this by using computer memory to cache CD directory information. This is done transparently, so the user is not aware of CD-Fast working in the background. Eesox claim that it will work with all versions of CDFS, all CD drives, all Acorn computers and will not interfere with the successful operation of any CD-ROM! Bold claims indeed and, unfortunately, I can only verify some of them!

The supplied software can be used in two different modes of operation. Minimum memory mode uses just 8Kb (for both code and cache), and enhanced mode uses 36Kb. Enhanced mode gives the best performance, but it does so at the expense of using more memory.

Installation is very simple, as CD-Fast is supplied as an application which installs on the icon bar. Selecting the CD-Fast icon opens a configuration window which allows the user to select either minimum memory mode, enhanced memory mode, or switch off CD-Fast altogether. Whichever mode is set can then be saved to become the default.

For the 'techies', CD-Fast is a relocatable module which is controlled by a standard WIMP user

interface. As this WIMP user interface also occupies some memory, it is possible to install only the CD-Fast module. If this is done as part of the boot sequence, the module opens a window when the computer is booting which tells the user it has installed successfully and which mode of operation it is using.

With 10Mb RAM fitted to my Risc PC 600, shortage of memory is not a problem, so I configured CD-Fast to work in enhanced mode (which the manufacturer recommends as the standard mode of use). In the best scientific tradition, I then conducted some short tests on my system, which consists of a Cumana double-speed SCSI CD-ROM drive and SCSI 2 interface. The results are shown in the left-hand half of the table below.

I also tried out CD-Fast on a HCCS Ultimate double-speed IDE CD-ROM drive. The results are published in the right-hand half of the table below.

As can be seen, the increase in access speed for IDE is very significant! They certainly confirm Eesox's own claims that enhanced mode can bring about a 31% - 44% increase in performance. Even a 21% decrease in the time taken to open the root directory window of a photo CD, using the SCSI drive, is quite impressive.

Indeed, the only fly in the ointment, in my IDE tests, was the Photo CD. This is a 'gold' multi-session CD which contains 28 of my own photographic images. The times it threw up were extremely inconsistent whether CD-Fast was used or not. The 87% increase shown above in the IDE table is therefore highly suspect. I also fully accept that one person when using a stopwatch to clock times as short as 1 - 2 seconds must produce times which

	SCSI DRIVE						IDE DRIVE					
	Open Root Dir			Open Sub Directory			Open Root Dir			Open Sub Directory		
	Normal	CD Fast	% Inc	Normal	CD Fast	% Inc	Normal	CD Fast	% Inc	Normal	CD Fast	% Inc
PDCD-1	0.58	0.56	3.45	1.93	1.64	15.03	2.22	1.00	54.95	8.70	2.43	72.07
PDCD-2	1.25	1.04	16.80	0.97	0.92	5.15	1.92	1.08	43.75	5.14	1.71	66.73
Risc Disc	1.96	1.85	5.61				3.48	1.16	66.67			
PhotoCD	2.30	1.81	21.30				10.24	1.28	87.50			
CC Clip Art 1	1.42	1.29	9.15				2.54	1.02	59.84			
Hutchinson Enc.	1.02	0.96	5.88				1.48	1.12	24.32			

are not very accurate. However, I do feel that these times are representative of what can be achieved, and are very significant, as they prove beyond any doubt that CD-Fast works.

Conclusion

Although beginning this review from a position of some cynicism, I must now eat humble pie! Not only does CD-Fast work but it works extremely

effectively. It is now installed in my computer when the system boots and I wouldn't be without it.

A site licence for CD-Fast is also available, as is a multi-user version for networks called NetCDFast. Contact Eesox for more information.

CD-Fast costs £25 + £2 p&p + VAT from Eesox, or £30 through Archive ♦

Electronic Books and PaperOut

Jochen Konietzko

The market for electronic books seems definitely about to take off – at least that was the impression one could get at this year's Frankfurter Buchmesse (Frankfurt book show – the largest of its kind in the world), where CDs were presented in Hall 1.

Electronic books differ from the well known Multimedia CDs, like Compton's Interactive Encyclopedia, in two ways:

- ♦ Rather than on a "naked" 12 cm CD, they are issued on a smaller 8 cm CD which is housed in a caddy similar to an MO disc or a floppy.
- ♦ The emphasis is definitely on text; pictures and sound are there, but no animations.

To read such a book, it is not necessary to buy a Sony Data DiscMan for which they were originally developed. Any computer with a CD-ROM drive – and the right software – can process these discs.

Acorns, PCs and others

The Tools company in Bonn, Germany, has published a reader for electronic books called PaperOut (distributed in Britain by Cumana). There are versions for MacOS, NeXTSTEP, SunOS, Windows, and – last but by no means least – RISC OS (2 or higher).

The price for the Acorn version is £49.95 + VAT (£57 from Archive).

PaperOut can access electronic books on any media, from CDs through floppies to databases on the Internet.

The package

PaperOut comes in what looks like a VHS video cassette case, shrunk to paperback size. Inside this is a DD floppy disc, accompanied by a small slip of paper describing the basics – how to get the CD out of its caddy and how to install the software. The disc contains PaperOut itself, some drivers for Cumana's CD-ROM drives, the contents of the leaflet as a text file and a very extensive online help in the form of an EB, plus a second EB with a list of available electronic books (about 150).

Installation

You simply drag PaperOut to the desired place on your hard disc and then a double click will put the usual icon onto the icon bar.

From this point onwards, things may well get a bit rough. The review copy I received from Cumana (version 2.1b, 24-Aug-94) came together with "The Hutchinson Guide to the World" (more about that later); I took out the CD, put it into the adapter ring (£4 through Archive) for my CD-ROM drive (Toshiba 3401TA with the cached Morley module – software revision 1.17, CDFS 2.21) and had PaperOut mount the disc. The drive's light flashed for about four minutes, then I received a number of error messages which basically told me that the disc's format was not understood.

Phone calls to Morley and Tools showed that Morley indeed have not (yet?) incorporated support for electronic books in their software, and that there is a newer version of PaperOut (2.1d, 14-Dec-94) which can supplement the CD-ROM drive's own drivers.

Tools promised to send the new version straight away.

This they did, and the new version works without a hitch. (I usually get an error message like "Target area – check condition" when I mount the CD, but this has no apparent consequences.)

Moving through a book

Once a text has been loaded, you can scroll through it in various ways; with the mouse and the scroll bar, or with a number of keys – the cursor keys and PageUp/PageDown, together with Shift and Ctrl, allow every possible move. As an example, you can move up/down one page with PageUp/Down or Cursor left/right or Shift-Cursor up/down.

Some words are highlighted (in the default setting in dark blue, but this, like the fonts and font sizes used, can be changed at will). These highlights mark cross references, either to other text passages, or to pictures or sound samples. Once you have followed one of these references far enough, the backspace key (or clicking on an icon) will bring you safely back to your starting point.

The Acorn version makes use of adjust-clicking, the idea being that only if you follow the various references with select-clicks, will every new article appear in its own window.

Looking for information

The program offers several search methods:

- ◆ Menu Search – the table of contents of an EB is arranged in the form of menus with various sub-menus for chapters, sub-chapters and paragraphs.
- ◆ Word/end-word search – important expressions are printed in **bold** typeface; word search and end-word searches allow you to look for them, and for chapter headings, by typing in the first or the last few letters of these words. The result is a list of the paragraphs containing those words.
- ◆ Keyword search – this is a full text search where you can look for any word contained in the text of a volume. This yields a list of paragraphs containing this word.
- ◆ Consultation/graphic search – this is the rather grand name for the fact that both text and graphics

can contain hyperlinks, and clicking on them will move you straight to the referenced subject.

- ◆ Multi-search – here you can enter up to four words which will be searched for at the same time.

Most electronic books contain only some of those search options.

Data Export

Both words and pictures can easily be exported in Text / Sprite format but there is no option for WYSIWYG printing of text passages.

The Hutchinson Guide to the World

This EB was supplied by Cumana for my review.

Mounting the disc opens this window:



First of all, I tried to find 'Norwich'.

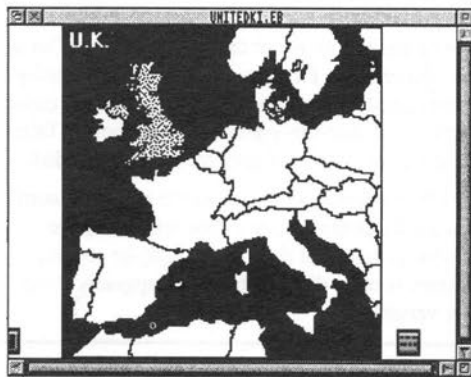
Looking for the keyword 'Norwich' brought up four articles: East Anglia, England, Norfolk and Norwich.

This is the article on Norwich itself:

Norwich

Cathedral city in Norfolk, E England; population (1991) 121,000.

Industries include shoes, clothing, chemicals, confectionery, engineering, and printing. It has a Norman castle (with a collection of paintings by the Norwich school; Cotman and Crome); 15th-century Guildhall, medieval churches, Tudor houses, Georgian Assembly House. The University of East Anglia 1963 has the Sainsbury Art Centre for Visual Arts on its campus. The Sainsbury Laboratory 1987, in association with the John Innes Institute, was founded to study the molecular causes of disease.



A menu search was not possible because my version of the CD has a bug – clicking on the volume “Cities, Regions, ...” leads instead to the menu for “Travel quotes”.

The maps in this book are miserable little things (see above), allowing no graphic search.

Contents of the disc:

◆ Volume 1 (Countries) contains a statistical section, similar to the CIA fact book, (for the UK: 5752 bytes), background articles (UK: 20292 bytes) and small maps (UK: see above)

◆ Volume 2 (Cities) contains short articles like the one on Norwich above; due to the bug mentioned above, getting an overview was rather difficult, so I just did a few word searches. There are, for example, 339 entries starting with “A”. Large regions are covered in longer articles; England was granted 7596 bytes.

◆ Volume 3 (Quotes) contains gems like “Oxford – one of the supreme gratifications of travel, the perfect prose of Gothic.” Henry James, English Hours 1905.

◆ Volume 4 (Earth data) is made up of tables – from the Beaufort and Richter scales to Famous Gold Rushes.

Some other electronic books

To show the areas covered so far by electronic books, here are a few of the titles listed by PaperOut (just a small excerpt from the first part of the list, up to the letter C):

- ◆ 2020 Vision: Transform Your Business Today to Succeed in Tomorrow's Economy
- ◆ 4000 Questions de Culture Générale
- ◆ AA Hotels and Restaurants in Britain and Ireland
- ◆ American Heritage Electronic Dictionary & Roget's II Electronic Thesaurus (200,000 words / 40,000 words with 500,000 synonyms)
- ◆ Berlitz Business Traveller
- ◆ Bluffer's Guide to High Society
- ◆ Call of the Wild by Jack London
- ◆ Chambers Science & Technology Library
- ◆ Chronik des 20. Jahrhunderts mit Personenlexikon
- ◆ Cronologia de los Descubrimientos (descubrimientos = discoveries)
- ◆ CIA World Fact Book
- ◆ Compton's Concise Encyclopedia (contains the 26 volume encyclopaedia)

A number of electronic books are available through Archive at £43 each.

Electronic books vs. multimedia CDs

I had the opportunity to browse through the German “Bertelsmann Universallexikon”, which is available in both formats. The comparison is as follows:

The text items were identical, except that the EB contained slightly more of them. (Possibly, the search routines are just organised differently, but keyword searches on words like ‘England’ or ‘Germany’ always came up with a slightly higher number of finds in the EB.) Pictures and sound samples were also identical; the quality of the photos in the EB was bad, but this need not be so; another EB I have seen (about the Solar System) contains spectacular colour photos of the planets and their moons. Sound samples range from pieces of music, through bird calls, to passages from important speeches.

The EB does not contain any animations; on the other hand, getting started (from the moment you

insert the CD to the moment the first text you are looking for appears on the screen) is rather faster with the EB.

On the whole, I found the multimedia CD more fun, the EB more effective.

Niggle

There is just one thing I don't like about PaperOut. Keywords (in full text search) are usually hidden somewhere in an article. PaperOut does not highlight them in any way, and so they tend to be hard to find; in contrast, on all multimedia CDs I have so far seen, words found are shown inverted in the same way as in Edit or Impression.

Conclusion

For people serious about data retrieval, PaperOut is a useful product. Electronic books are not as flashy as multimedia encyclopaedias, but – if only because there are no disc-space-guzzling animations – facts are quite easy to find. PaperOut is recommended.

The Hutchinson CD – without the bug mentioned – is an excellent source for data concerning the various countries of the world. Do make certain, though, that the disc you buy is an upgraded, bug-free version. ♦

Fact-File

(The numbers in italic are fax numbers)

4th Dimension	1 Percy Street, Sheffield, S3 8AU. (0114-270-0661) (0114-278-1091)
Abacus Training	29 Okus Grove, Upper Stratton, Swindon, Wilts, SN2 6QA.
Acorn Direct	FREEPOST, 13 Dennington Road, Wellingborough, Northants, NN8 2BR. (01933-279300)
Acorn Computers Ltd	Acorn House, Vision Park, Histon, Cambridge, CB4 4AE. (01223-254254) (01223-254262)
Aleph One Ltd	The Old Courthouse, Bottisham, Cambridge, CB5 9BA. (01223-811679) (01223-812713)
APDL	39 Knighton Park Road, Sydenham, London, SE26 5RN.
Apricote Studios (p16)	2 Purls Bridge Farm, Manea, Cambridgeshire, PE15 0ND. (01354-680432)
Avie Electronics (p18)	7 Overbury Road, Norwich. (01603-416863) (01603-788640)
Calligraph Ltd	53 Panton Street, Cambridge CB2 1HL. (01223-566642) (01223-566643)
Clares Micro Supplies	98 Middlewich Road, Rudheath, Northwich, Cheshire, CW9 7DA. (01606-48511) (01606-48512)
Colton Software	2 Signet Court, Swanns Road, Cambridge, CB5 8LA. (01223-311881) (01223-312010)
Computer Concepts (pp8/12)	Gaddesden Place, Hemel Hempstead, Herts, HP2 6EX. (01442-63933) (01442-231632)
Creative Curriculum Software	5 Clover Hill Road, Savile Park, Halifax, HX1 2YG. (01422-340524) (01422-346388)
Dalriada Data Technology	145 Albion Street, Kenilworth, Warwickshire, CV8 2FY. (01926-53901)
David Pilling	P.O.Box 22, Thornton Cleveleys, Blackpool, FY5 1LR.
Digital Phenomena	104 Manners Road, Southsea, Hants, PO4 0BG.
EESOX	5 Hillfield Road, Comberton, Cambridge, CB3 7DB. (01223-264242)
Evolution Computer (p7)	An den Klippen 23, 57462 OLPE, Germany. (00-49-2761-3062)
ExpLAN	St Catherine's House, 20 Plymouth Road, Tavistock, Devon, PL19 8AY. (01822-613868) (01822-610868)
Fabis Computing	Sarford House, Swadlincote, Derbyshire, DE11 9SL. (01283-552761)
Generation Design	2 Whitecliff Gardens, Blandford Forum, Dorset DT11 7BU.

Geordian Systems	18 Megdova Str., 131 22 ILION, Athens, Greece. (+30-271-24355) (gsal@posidon.servicenet.ariadne-t.gr / gkapog@di.uoa.ariadne-t.gr)
HCCS Ltd	575-583 Durham Road, Gateshead, NE9 5JJ. (0191-487-0760) (0191-491-0431)
Hodge Electronic Services	16 Mold Road, Mynydd Isa, Clwyd, CH7 6TD. (01244-550803)
HS Software	56 Hendrefolien Avenue, Sketty, Swansea, SA2 7NB. (01792-204519) (01792-298283)
Iota Software Ltd	Iota House, Wellington Court, Cambridge, CB1 1HZ. (01223-566789) (01223-566788)
Irlam Instruments	133 London Road, Staines, Middlesex TW18 4HN. (01895-811401)
iSV Products	86, Turnberry, Home Farm, Bracknell, Berks, RG12 8ZH. (01344-55769)
KCS Premier	71-73 Chapel Street, Leigh, Lancashire, WN7 2DA. (01942-677777) (01942-672300)
Krisalis Software	Teque House, Mason's Yard, Downs Row, Moorgate, Rotherham, S60 2HD. (01709-372290) (01709-368403)
Kudlian Soft	8 Barrow Road, Kenilworth, Warwickshire, CV8 1EH. (01926-851147)
Lindis International	Wood Farm, Linstead Magna, Halesworth, Suffolk, IP19 0DU. (0198-685-477) (0198-685-460)
Longman Logotron	124 Cambridge Science Park, Milton Road, Cambridge CB4 4ZS. (01223-425558) (01223-425349)
Millipede Electronic Graphics	Cambridge House, Hargrave, Bury St Edmunds, Suffolk, IP29 5HS. (01284-850594) (01284-850351)
Newman Software	c/o Computer Centre, Newman College, Genners Lane, Bartley Green, Birmingham, B32 3NT.
Oak Solutions	Dial House, 12 Chapel Street, Halton, Leeds, LS15 7RN (0113-232-6992) (0113-232-6993)
Octopus Systems	9 Randwell Close, Ipswich, IP4 5ES. (01473-728943) (01473-270643)
Oregan Developments	36 Grosvenor Avenue, Streetly, Sutton Coldfield, B74 3PE. (0121-353-6044)
Papersoft	10 Dunlin Road, Hemel Hempstead, Herts, HP2 6LU. (01442-391967)
Partis Logistics	44 Alder Road, Hadrian Park, Wallsend, Tyne & Wear, NE28 9UB. (0191-295-5988) (0191-295-5988)
Quantum Software	35 Pinewood Park, Deans, Livingston, EH54 8NN. (01506-411162 after 6)
Sherston Software	Angel House, Sherston, Malmesbury, Wilts. SN16 0LH. (01666-840433) (01666-840048)
Silicon Vision Ltd	Signal House, Lyon Road, Harrow, Middlesex, HA1 2AG. (0181-422-3556) (0181-248-3589)
Softase (p15)	The Old Courthouse, St Peters Churchyard, Derby, DE1 1NN. (01332-204911) or (01684-73173)
Soft Rock Software	FREPOST (BS7978), Westbury-on-Trim, Bristol, BS10 7BR.
Superior Software	P.O. Box 6, Brigg, S Humberside, DN20 9NH. (01652-658585) (01652-657807)
The Advisory Unit	Endymion Road, Hatfield Herts, AL10 8AU. (017072-65443) (017072-73651)
The ARM Club	Freeport ND6573, London, N12 0BR. (0171-624-9918) (0181-446-3020)
The Really Good Software Company	39 Carisbrooke Road, Harpenden, Herts., AL5 5QS.
Topologika	Islington Wharf, Church Hill, Penryn, Falmouth, Cornwall, TR10 8AT. (01326-377771) (01326-377771)
Yellowstone Educ. Solutions	Welbeck House, Welbeck Road, Luton, Beds. LU2 0HD.
Zenta Multimedia	10 Ravenhurst Drive, Birmingham, B43 7RS. (0121-358-3054) (0121-358-5969)

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